THE EFFECTS OF A TREATMENT CURRICULUM ON THE LEARNING TRANSFER OF PROSOCIAL BEHAVIOR IN ADVENTURE EDUCATION

by

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ABSTRACT

The issue of learning transfer is of prime importance to the field of adventure education. Adventure education programs are designed to promote a variety of personal development outcomes for participants, and a significant amount of research has validated these outcomes. However, in order for students to use the learning gained during their course, they must transfer the learning from a backcountry context to their postcourse life.

This study measured the effects of a theoretically-grounded treatment curriculum designed to foster the transfer of learning of expedition/prosocial behaviors compared to a traditional curriculum. Expedition behavior (EB) is a concern for other people, coupled with the willingness to demonstrate this concern through action. It is a term used in many adventure education programs, and is similar to a psychological construct called prosocial behavior. Prosocial behaviors (PSB) are described as behaviors that are primarily aimed at benefiting others, and may be described as sharing, comforting others, donating goods or money, volunteerism, and instrumental helping.

The treatment curriculum was delivered to 14- to 15-year-old students who attended 2-week long adventure education courses with the National Outdoor Leadership School (NOLS) in the summer of 2008. Each of these courses featured 15 students. The instructors of four of the courses were trained to administer the treatment curriculum and the instructors of the other four courses administered the traditional curriculum.

In order to assess transfer, a measure of PSB, the PTM-R, was completed by research participants three times: before the course left for the field, immediately when the course returned, and 3 months postcourse. In addition, participants completed a standardized outcome measurement of EB, along with several qualitative questions. Quantitative data were analyzed using MANOVA and qualitative data were analyzed using constant comparison technique.

Results suggested that the treatment curriculum was responsible for increasing proximal learning of EB. Results did not show that the treatment curriculum was effective in fostering the transfer of PSB. Qualitative data analysis was incapable of detecting differences in data between the two groups, but offered insight into how students use their EB postcourse. Implications for adventure programming, pedagogy, and transfer are considered.

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CHAPTER I

INTRODUCTION

The issue of learning transfer is of critical importance to the field of adventure education (Gass, 1999). Adventure education programs are designed to promote a variety of personal development outcomes for participants, and a significant amount of research has validated these outcomes (e.g., Hattie, Marsh, Neill, & Richards, 1997; Sibthorp, Paisley, & Gookin, 2007). However, in order for students to use the learning gained during their course, they must transfer it from a backcountry context to their postcourse life. Many of the outcomes gained during an adventure experience may be lost or become unusable by students once they leave the context of their expedition and continue their normal routine.

Broadly speaking, learning transfer describes how learning achieved in one context can be applied in another context (Santrock, 2001). First studied by Thorndike (1903) near the turn of the 20 century, fields such as cognitive psychology, human resource development, kinesiology, and education have spent considerable resources attempting to determine how to influence transfer of learning. The literature suggests that three main influences on transfer include the characteristics of the student,

characteristics of the training program, and characteristics of the transfer environment (Baldwin & Ford, 1988). Within each of these three influences, there exist a number of specific mechanisms that may affect transfer. Key mechanisms include principle-based learning, reflection, feedback from instructors, learning curriculum in different contexts, and creating a transfer action plan (Burke & Hutchins, 2007; Cyboran, 2005; Foxon, 1994; Murphy & Woods, 1996).

It is unclear how much learning transfer can be influenced by instructional design. Detterman (1993) suggests that increased transfer cannot be taught, and that internal traits such as intelligence and motivation dictate how much learning is transferred. Holton and Baldwin (2003), however, believe that transfer can be effectively manipulated by training design. Most researchers believe there are a large number of factors that contribute to transfer, and that instructional design is but one set of factors (Baldwin & Ford, 1988; Cheng & Ho 2001; Holton, Bates, & Ruona, 2000).

Expedition behavior, a concept used by many adventure education programs, is a potentially transferable outcome. Paul Petzoldt, the founder of the National Outdoor Leadership School (NOLS) and the Wilderness Education Association (WEA) is credited with coining this term. In general, expedition behavior is a concern for others, coupled with the willingness to demonstrate this concern. According to Petzoldt, "Good expedition behavior is an awareness of the relationships…which exist in the out-of-doors plus the motivation and character to be as concerned for others as one is for oneself" (Petzoldt, 1984, p. 168). Petzoldt states that many expeditions succeed or fail based on the behavior of individuals and the regard they demonstrate (or lack thereof) for their peers.

Although expedition behavior is used specifically in adventure education programs, it is quite similar to prosocial behavior, a construct within the social psychology literature. Prosocial behaviors are described as behaviors that are primarily aimed at benefiting others (Carlo, Crockett, Randall, & Roesch, 2007; Eisenberg & Fabes, 1998; Staub, 1978). These behaviors are often described as sharing, comforting others, donating goods or money, volunteerism, and instrumental helping (Carlo et al., 2007). Motivations for engaging in prosocial behavior vary from receiving positive recognition to soothing personal distress to reinforcing self-concept (e.g., Carlo & Randall, 2002). The question of why people engage in prosocial behaviors has been determined to be a function of (a) learning, (b) social and personal standards, and (c) arousal and affect (Penner, Dovidio, Piliavin, & Schroeder, 2005).

There are several reasons why the treatment curriculum used in this study may not facilitate transfer of expedition behavior skills to a frontcountry setting. First, very few studies have examined the influence of specific transfer mechanisms during adventure education programs. Second, it may be that the learning achieved during a wilderness adventure education setting is too context-bound to be transferred to life postcourse. Similarly, how much transfer can be intentionally programmed for is unknown. Some authors (e.g., Detterman, 1993) believe that teaching for transfer is not possible. Further, it may be that prosocial behavior and expedition behavior are not similar constructs, and attempting to influence expedition behavior may not result in learning prosocial behavior.

However, considering the recent accumulation of knowledge regarding transfer mechanisms (e.g., Burke & Hutchins, 2007), it seems possible that incorporating transfer

mechanisms into a treatment curriculum could increase the transfer realized by participants. Given that expedition behavior is an outcome developed by adventure education programs, and given that it may be similar to prosocial behavior, examining the effects of a transfer treatment curriculum on both expedition and prosocial behavior may be a useful and applicable way to examine transfer of learning in adventure education. Thus, the purpose of this study was to assess the transfer of learning of prosocial behavior among adolescents enrolled in an adventure education course by curriculum type. The treatment curriculum incorporated transfer mechanisms to foster increase transfer. A traditional curriculum was used as a baseline for comparison purposes. Quantitative results suggest that that there were no differences in the transfer of prosocial behavior between the treatment group and the comparison group. Qualitative results suggest that transfer of expedition behavior skills occurred for many students.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to examine the effects of a treatment curriculum designed to increase transfer of prosocial/expedition behavior from an adventure education program to life postprogram. This chapter reviews three bodies of literature that were pertinent to the study: (a) adventure education; (b) learning transfer; and (c) prosocial/expedition behavior.

The subject of learning transfer is especially important to adventure education programs; in some respects, transfer is the core principle upon which the field is founded. Learning achieved from adventurerogramming depends on students being able to transfer outcomes from a field-based context to a frontcountry context if they are to be applied. Frontcountry, in this case, refers to life postcourse, out of the wilderness. Transference is affected by many different factors, including the type of transfer assessed (e.g., near vs. far, high-road vs. low-road) characteristics of the student (e.g., motivation, intelligence), characteristics of the instruction (e.g., competent, organized), and characteristics of the organization (e.g., climate, communication content and channels). Although these topics are covered in detail later, for now it is worth noting that the transfer of adventure education outcomes is thought to be somewhat serendipitous and relatively difficult to influence intentionally. These issues are central to the problem; that

is, very little is known about what makes learning transferable in adventure education or how to foster transfer of learning.

However, the learning transfer literature from the human resource development field (e.g., Baldwin & Ford, 1988) and educational psychology field (e.g., Gick & Holyoak, 1983) suggests that there are ways to maximize learning transfers that have not been capitalized on in adventure education. Thus, it seems as though incorporating the findings of recent research into an adventure education program may assist students in transferring learned outcomes. The following section examines some of the issues that are central to adventure education. This chapter then examines learning transfer and constructions of expedition and prosocial behaviors.

Adventure Education

Adventure education is a type of educational experience in which the learner is engaged in adventurous activity, is faced with challenging tasks, and navigates a unique social and physical setting (Walsh & Golins, 1975). The outdoors provides the physical environment; mountains, deserts, rivers, and oceans supply the "classrooms" for students. The challenges faced commonly include navigating the physical terrain and working as a team to achieve group goals. The social setting is usually comprised of a group of peers and one or more instructors. Typical adventure education programs vary in duration from several hours to more than a month in length. As a field, adventure education shares many characteristics with outdoor education, environmental education, and wilderness education. There is often substantial overlap between these types of education (Gilbertson, Bates, McLaughlin, & Ewert, 2006; Priest & Gass, 1997).

The primary purpose of adventure education is to provide personal development outcomes for the student. Many different outcomes have been studied by researchers, including self-concept and self-esteem (e.g., Luckner, 1989), group development outcomes (e.g., Mitchell & Mitchell, 1988; 1989), environmental awareness outcomes (e.g., Hammitt et al., 1996), and wilderness living skills (e.g., Holman & McAvoy, 2004). The goal of adventure education programs—to create personal development outcomes—has been an integral part of its mission (Miner, 1999) and continues to drive programming today.

This section of the literature reviews issues central to adventure education. It proposes that the roots of adventure education are well grounded philosophically and have a distinct historical lineage. It describes the pedagogical environment in which adventure education is situated, and investigates the research literature foundational to practice. In addition, it explores the transfer literature within adventure education in order to set the stage for a more thorough investigation of the transfer literature from the human resource development and cognitive/educational psychology fields.

Adventure Education: Definition, Structure, and Pedagogy

Adventure education can be defined as "education that is conducted in a wilderness-like setting or through nature and physical skills development to promote interpersonal growth or enhance physical skills in outdoor pursuits" (Gilbertson, Bates, McLaughlin, & Ewert, 2006, p. 8). Typically, an adventure education course or program is comprised of activities that foster interpersonal skill development and involve group problem solving, decision-making, judgment, cooperation, communication, and trust (Priest & Gass, 1997). These activities, and their subsequent processing, have been

shown to develop intrapersonal skills such as self-concept, self-awareness, spirituality, confidence, self-efficacy, and new insights on life (Priest, 1999).

Adventure education exists within the greater context of experiential education, which can be defined as "a philosophy and methodology in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills, and clarify values" (Association of Experiential Education, 2007). The four-stage model of experiential learning proposed by Kolb (1984) explains the experiential learning cycle. It is a process by which learners use 1) *concrete experiences* as the basis for observation and 2) subsequent *reflection* to analyze how those experiences unfolded. These reflections can then be distilled into 3) *abstract concepts* from which new inferences can be drawn. These inferences are then 4) *actively tested* and used as models for understanding new concrete experiences.

Whereas the process of experiential education can be applied in many educational contexts—from biology labs to field trips to internships—it can perhaps realize its purest form during expeditionary adventure education. Raiola and O'Keefe (1999) write:

> Experiential education emphasizes direct experience as a resource that can increase the quality of learning through combining direct experience that is meaningful to the learner with guided reflection and analysis. It is a teaching and learning approach that allows numerous opportunities for the learner to connect cognitive (head), kinesthetic (body), and affective (spirit or emotional) aspects. It is a conscious mixing of concrete experience, reflective observation, abstract conceptualization, and active experimentation. (p. 47)

Kolb's 4-stage model is cyclical. Once learners complete a full cycle of all four stages, they may return to the concrete experience stage to begin anew. Consistent with other constructivist learning theories, Kolb suggests that because learners are in a constant state

of metamorphosis, each time they re-approach the *concrete experience* stage of the model they have modified one aspect of themselves (Kolb, 1984).

The labels of "outdoor education," "environmental education," and "adventure education" are sometimes applied interchangeably, but each is a distinct type of educational programming. Outdoor education takes "place primarily through involvement with the natural environment. In outdoor education, the emphasis for learning is placed on relationships concerning people and natural resources" (Priest & Gass, 1997, p. 17). The primary aims of environmental education are to produce a cognitive understanding of environmental issues and/or positive affect for the natural world (Priest & Gass, 1997). Environmental education programs seek to elicit pro-environmental behaviors among their students, which are "behaviors that consciously seek to minimize the negative impact of one's actions on the natural and built world" (Kollmuss & Agyeman, 2002, p. 240). The key feature of adventure education, and what most critically discriminates it from related fields, is the focus and attention on personal development.

Although experiential learning theories are most often used to explain how learning in adventure education programs takes place, other learning theories influence student outcomes as well (Paisley, Furman, Sibthorp, & Gookin, 2008). Behavioral, cognitive, and constructivist learning theories each play a role in student learning. The social learning theory of Albert Bandura (1989) implies that the social milieu in which students must operate during adventure education results in examples of socially desirable and undesirable behaviors. Upon seeing the consequence of these behaviors, students are then able to refine their own performance, which results in positive

reinforcement. Information processing theories of cognitive psychology stipulate that, among other things, skill rehearsal of a task and the total time students spend practicing a skill—be it leadership or tying a knot or setting up a tent—results in deeper learning of a subject (Sternberg, 2005). The constructivist work of Russian developmental psychologist Lev Vygotsky suggests that the Zone of Proximal Development and relationship to a More Knowledgeable Other can assist learning (Kozulin, Gindis, Ageyev, & Miller, 2003). Each of these concepts can help shed light on the learning that occurs during adventure education.

Adventure Education: Populations and Activities

Youth are the traditional population on adventure education courses (Prouty, 2007). The National Outdoor Leadership School (NOLS), Outward Bound, Boy and Girl Scouts of America, and the American Camp Association (all organizations involved in outdoor education or adventure education) all began their programs by working with adolescents, usually boys (Raiola & O'Keefe, 1999). As programs grow, however, their participants became more diverse. Today, many adventure education programs are mixed gender and work with children, adults, elderly, corporate groups, persons with disabilities, and therapy groups (Ewert & McAvoy, 2000; Miner, 1999). In general, participation in adventure programming of some type is growing 10-15% per year (Prouty, 2007).

Backpacking is the classic activity that adventure programs use to cultivate personal development outcomes in students, although the types of activities associated with adventure programs has diversified in recent decades. Programs use mountaineering, rock climbing, canoeing, skiing, cycling, sea and river kayaking,

whitewater rafting, caving, camping, horsepacking and other activities as means of travel and experience (Priest & Gass, 1997). While certain adventure activities probably do promote different types of student outcomes than others, empirical evidence has not been provided that offers insight on the matter. Generally, the activities that programs offer are a result of logistics, expense, appeal to potential students, and the physical proximity to the program headquarters.

Challenge courses, also called ropes courses, are a specific type of adventure education that attempt to bring the adventure experience to an urban or semiurban setting. Challenge courses use a series of towers, cables, platforms, and hurdles to create a physical environment that presents challenges (Priest & Gass, 1997). The experience—typically around 6 to 8 hours in duration—is led by a skilled facilitator who guides a group of individuals through the course while using metaphor, reflection, and debriefing activities to shed light on the group process (Luckner & Nadler, 1997). These initiatives typically demand a high-level of group communication, problem solving, and critical thinking. Depending on individual and group goals, participants are able to learn experientially about leadership, group development, communication, and teamwork that is thought to be transferable to other facets of their lives. Challenge courses are often used by corporate groups, scouting organizations, church groups, and as therapy for individuals with disabilities (Luckner & Nadler, 1997). Historically, adventure programs have used challenge courses as an adjunct to wilderness-type experiences as well as a stand-alone activity. Upon considering the effectiveness of challenge courses, it becomes clear that the physical challenge—be it rafting, hiking, or challenge-based initiatives—is only a stage for the deeper learning to be achieved.

The preceding discussion offered a definition of adventure education and situated the practice within the context of experiential education. Although experiential education is largely the educational approach by which adventure education programs operate, other learning theories can help explain how outcomes are produced. The preceding section also compared adventure education to the related fields of outdoor education and environmental education—the most distinguishing characteristic of adventure education is that it focuses on personal development. It investigated the typical population and activities used to foster developmental gains, and discussed a specific type of adventure education, challenge courses. After having provided a context for understanding what adventure education is, this chapter now discusses the historical and philosophical foundations of the practice.

Adventure Education: History and Philosophy

In spirit if not name, the roots of adventure education extend far back into history. Jasper Hunt creates a well-supported argument that the ideas central to adventure education were advocated by Greek philosophers. Based on excerpts from the Plato's *Republic,* Hunt (1999) claims, "It seems obvious to Plato that the best way to learn about what one needs to know for one's maturity, is to experience it directly" (p. 116). Aristotle, too, had ideas that are similar to those central to adventure education; specifically that education should be concerned with the development of virtue in young people (Hunt, 1999). Hunt (1999) summarizes "both Plato and Aristotle are right about education being directly concerned with learning virtue and that this concern with learning virtue is foundational to any philosophy of adventure education" (p. 117).

These ideas have been attended to throughout modern human history. The philosopher Comensius (1592-1670) suggested that the senses should be used in learning, and that "a child should experience the actual object before reading about it" (Hammerman, 1980, p. xv). Pestolazzi (1746-1827), an Italian philosopher, felt that a child would be able to form generalizations and principles after learning practical skills (Hammerman, 1980). William James (1988) struggled to reconcile his ideas that war was largely immoral, yet that the training of soldiers represented a means of creating ideal citizens. He suggested that youth challenge themselves against nature rather than a military foe:

> If now—and this is my idea—there were instead of a military conscription a conscription of the whole youthful population to form for a certain number of years, a part of the army enlisted against *Nature*, the injustice would tend to be evened out, and numerous goods to the commonwealth would follow. The military ideals of hardihood and discipline would be wrought into the growing fiber of the people; no one would remain blind as the luxurious classes now are blind, to man's relations to the globe he lives on, and to the permanently sour and hard formations of his higher life. (p. 16)

Henry David Thoreau believed that an education should involve the process of direct experience. Thoreau (1989) wrote:

> "But," says one, "you do not mean that the students should go to work with their hands instead of their heads?" I do not mean that exactly, but I mean something like that; I mean that they should not play life, or study it merely, while the community supports them at this expensive game, but earnestly live it from beginning to end. How could youths better learn to live than by once trying the experiment of living. (p. 94)

The ideas that comprise the modern conceptualization of adventure education began to cement into distinguishable form when Kurt Hahn became the first headmaster of the Salem School in Germany in 1920 (Miner, 1999). Like other schools, The Salem School used a scholarly curriculum, but was also focused on developing virtue in its students.

Hahn's impetus for such a school was based upon several observations about the state of modern youth. These observations were listed as several states of declines:

1. decline in fitness due to modern methods of locomotion
2. decline of initiative and enterprise due to the widespread disease of spectatoritis
3. decline of memory and imagination due to the confused restlessness of modern life
4. decline of skill and care due to the weakened tradition of craftsmanship
5. decline of self-discipline due to the ever-present availability of stimulants and tranquilizers
6. decline of compassion due to the unseemly haste with which modern life is conducted (Richards, 1999, p. 66)

In 1941, Hahn moved to Aberdovey, Wales to help found Outward Bound. Outward Bound is credited with being the model upon which many subsequent adventure education programs are founded. The metaphor "Outward Bound" suggests the voyage of their adolescent students in the context of their life. It also speaks to the use of the ocean as a place to learn valuable lessons. "The training at Aberdovey", school co-founder and Hahn admirer Lawrence Holt wrote, "must be less a training *for* the sea than *through* the sea, and so benefit all walks of life" (Miner, 1999). This concept of using the natural environment to foster personal growth remains central to adventure education to this day, just as Outward Bound remains the model from which other programs have grown.

The development of outdoor programs in the United States had been growing for some time before the establishment of Outward Bound in Wales. Some examples of the early use of the outdoors for education are provided by Raiola and O'Keefe (1999). The Gunnery School in Connecticut began using camping as part of its educational program in 1862. In 1910, the Boy Scouts of America was established, followed by the creation of the Girl Scouts in 1912. The Camp Directors Association (later to become the

American Camp Association) was established in 1924 and the first academic courses in recreation were offered at New York University in 1936. The following year, students attending the State Teachers College at Cortland could register for an outdoor leadership training course. Numerous other programs developed around the nation, and the Colorado Outward Bound School was established in 1962.

Today, adventure education programs continue to grow (Prouty, 1997). Several large national or international programs such as NOLS, Outward Bound, the Wilderness Education Association (WEA), the Student Conservation Association (SCA), and Project Adventure are all well established. Each of these organizations draws from the lineage of Kurt Hahn and the original Outward Bound school in Wales. For instance, Paul Petzoldt, an Outward Bound instructor, founded both NOLS and the WEA. Today, the WEA represents outdoor programs at many universities around the nation. University-based outdoor programs, scouting groups, and camps all continue to expand (Prouty, 1997). The rich tradition established by Kurt Hahn, and based upon the philosophies of Socrates, Aristotle, James, and others, lives on in practice today.

The preceding discussion informs this study. For instance, based on the traditions of adventure education, backpacking would be an appropriate activity to use for research in adventure education. Further, asking adolescents to be research participants is consistent with the traditional population served by adventure education programs. It is likely that adolescents have the opportunity to learn a substantial number of skills and abilities because they enter programs with fewer skills and abilities than adults (Sibthorp, Paisley, & Gookin, 2007). In addition, it seems prudent to sample from one of the more established adventure education programs, such as Outward Bound, the WEA, or NOLS.

Now the reader's attention is turned to the outcome and process research that has been conducted in adventure education. This section of the chapter also discusses the transfer related research in adventure education and which outcomes have been shown to be most durable.

Adventure Education: Outcome and Process-related Research

Given that participant outcomes in adventure education are considered to be significant, it comes as no surprise that efforts to study the phenomena have been substantial. This section introduces the reader to some of the empirical literature on participant outcomes. The purpose is not to provide a comprehensive review of each research study. Rather, it is to provide a background to the different types of participant outcomes that have been examined.

In a meta-analysis of participant outcomes in adventure education Hattie et al. (1997) determined that 40 different outcomes have been researched. These were organized into six distinct types of outcomes: academic, leadership, self-concept, personality, interpersonal, and adventuresome:

> **Academic**—academic direct, academic general
> **Leadership**—Conscientiousness, decision-making, leadership-general, leadership-teamwork, organization ability, goals, time management, values
> **Self-concept**—physical ability, peer relations, general self, physical appearance, academic, confidence, self-efficacy, family, self-understanding, well-being, independence
> **Personality**—femininity, masculinity, achievement motivation, emotional stability, aggression, assertiveness, locus of control, maturity, neurosis reduction
> **Interpersonal**—cooperation, interpersonal communication, social competence, behavior, relating skills, recidivism
> **Adventuresome**—challengeness, flexibility, physical fitness, environmental awareness

In another review of the research in adventure education, Kellert (1998) looked at two major impacts of the outdoor experience: 1) effects on knowledge, attitudes, and behaviors towards the natural environment, and 2) impacts on physical and mental development. He used both a retrospective and longitudinal investigation of past participants in NOLS, Outward Bound, and the Student Conservation Association. Kellert reported that students experienced growth in environmental knowledge and awareness; environmental attitudes and values; outdoor recreational interests and skills; career choice and interest in community service; self-esteem and self-concept; interpersonal relations; critical thinking and problem solving; physical fitness and well being; and academic interests and performance.

It quickly becomes clear that adventure programming can result in many different outcomes for participants, but how those outcomes come about is less well understood. Ewert (1983) identified the process of adventure education is a "black box." Adventure education is an effective means of education, but the process by which it is effective is not entirely known. Two of the earliest models of participant change include the work proposed by Walsh and Golins (1975) and Gager (1977). Both models suggest that participant change is a result of a combination of factors (see Table 1).

Recent research has attempted to shed additional light on this issue. Notably, Sibthorp (2003) empirically tested Walsh and Golins' model and found that characteristics of the experience (e.g., instructor support, learning relevance) affected self-efficacy variables (e.g., leadership, social efficacy) that generally supported the model's effectiveness. Beames (2004) used interview data to determine that potential causes for outcomes include the relative isolation and remoteness of the experience,

Table 1. Models of participant change in adventure education

Walsh and Golins (1975)	**Gager (1977)**
The Individual is Placed in a ♦ Unique Physical Setting and ♦ Unique Social Setting (Group) and ♦ Faced with Progressively More Challenging Tasks and ♦ Exposed to Feedback and Personal Reflection, resulting in ♦ A Change in Values, Behaviors, and Attitudes	The Learner (is placed into a) ♦ Demanding Reality Context (which necessitates a mastery of) ♦ New Skills (which followed by) ♦ Critical Analysis and Reflection (coupled with the opportunity for) ♦ Action that Demands the Application of New Skills (which ultimately) ♦ Reorganizes the Meaning and Direction of the Learner's Experience

changing out-group members throughout the adventure experience, having people from a diverse background, the physically demanding nature of the course, and self-sufficiency developed from living out-of-doors for so long. McKenzie (2000) suggested that the physical environment, activities, processing, the group, the instructors, and the participant interact to produce outcomes. Although this research helps support the salient features of adventure education programs (e.g., physical environment, physical activities, social climate), the relative extent to which each factor is important is still largely undetermined.

Transferable Outcomes in Adventure Education

Many outcomes have been shown to be lasting in adventure programming. Ewert and McAvoy (2000) use the categories of *self-systems* and *group dynamics and development* to discuss distal outcomes of adventure education. The addition of two

more categories, *personal values* and *technical skills*, may sufficiently summarize the types of learning that transfer. The following discussion about which types of content from adventure education programs transfer is built around this conceptual organization.

Ewert and McAvoy (2000, p. 17) regard self-systems as the summation of "knowledge and beliefs that an individual holds about themselves and is developed through experience and comparison to others." There is evidence that distal outcomes such as self-esteem (Luckner, 1989), self-efficacy (Paxton & McAvoy, 2000), and self-concept (Marsh, Richards, & Barnes, 1986) gained through adventure experiences have durability for some time after the conclusion of the course. For instance, Propst and Koessler (1998) used an untreated control group and pre/post-test design to study self-efficacy levels of NOLS students. Results indicated that self-efficacy was elevated from baseline levels immediately after and 1 year after participation in their NOLS course.

With the advent of "professional" adventure education programs offering services to intact groups (e.g., NOLS Pro) and the rising popularity of corporate teambuilding trainings, the focus of interest on the transfer of group dynamics and development outcomes has increased. Research completed on the transfer of these types of skills has focused on how to increase the transfer in challenge course groups (e.g., Gass & Priest, 2006). Teamwork, intragroup trust, improved communication, risk taking, decision-making, and conflict resolution are all examples of group dynamics outcomes that may be developed through adventure education (Ewert & McAvoy, 2000; Paisley et al. 2008). Mitchell and Mitchell (1988; 1989) found that awareness of others and interpersonal skills were outcomes transferred from Outward Bound courses to life postcourse. These outcomes were significant 2 years postcourse among the 950 participant sample.

Anderson et al. (1997) found that adventure education participants reported greater friendship development as a result of their experience. Gass and Priest (2006) determined that factors such as trust, communication, collaboration, problem-solving, decision-making, and task completion could be increased among intact groups up to 12-months following a corporate adventure training program. More attention needs to be given to the transfer of group dynamics skills with particular regard to working with intact, corporate teams versus a more traditional adventure education. Given that transfer is dependent on the presence of a context to transfer abilities to, it may be that corporate groups can access this context in a more authentic capacity than a group that only exists for the duration of the adventure experience.

Adventure education programs are often explicit in their mission and purpose, such as Outward Bound's "To Serve, To Strive, and Not To Yield." Some participant outcomes, such as spirituality, environmental ethics, and social justice themes, can be expressed as personal values. For example, Miller (2001) used thematic analysis of five case studies elicited from participants on a 35-day canoeing expedition in Northern Ontario. Participants reported that they developed a commitment to personal activism that was maintained 3 years postcourse.

The development of environmental ethics is a primary goal of several adventure education programs. Mazze (2006) qualitatively examined the environmental attitudes of nine former NOLS students. Each of the nine reported an increase in their connection with nature and the outdoors several months postcourse. Further, each of the nine reported that their NOLS course affected their environmentally positive behavior. These findings corroborate those of Hammitt et al. (1996) who administered questionnaires to

288 students before, during and several months after their NOLS course. Results demonstrate that self-reported behavior was significantly more environmentally responsible 4 to 8 months postcourse.

Technical skills include the aspects of adventure education that are fundamental to day-to-day living in the outdoors. They include both travel skills (e.g., backpacking and canoeing) and living skills (e.g., cooking and shelter construction). Two studies (Anderson et. al., 1997; Holman & McAvoy, 2004) report participant transfer of technical skills. The transfer of technical skills has not been subjected to a significant number of studies, perhaps because it is a relatively inconsequential outcome compared to other types of outcomes.

Many studies used to assess transfer in adventure education have been limited by a small sample size. Thus, although several studies proffer evidence of what types of content transfer, little sense of the magnitude of transfer is provided. In addition, the curriculum of the programs used in the studies is often unknown. Consequently, conclusions about what is transferred cannot be compared to what *might* have been transferred. Although past literature has shed light on the transfer phenomenon, many questions remain.

Summary of Adventure Education

This section of the literature review discussed the salient characteristics of adventure education, such as definitions of the field and related fields, educational theories that may explain participant learning, and typical populations and adventure activities. It described the history and philosophy of the field and the contemporary status of adventure education. Primarily using meta-analyses, it described the well-

established outcome-based research of adventure education and then the less well-established process-based research pertaining to how the outcomes are achieved. Lastly, it described the transfer-based outcomes of adventure education.

Having reviewed these topics, the relevance of learning transfer to adventure education is clear. Adventure education is designed to produce personal development outcomes for participants, and upon consideration of the outcome-based research, it is apparent that this goal is often attained. However, in order for those outcomes to be of utility to participants, they must be transferred from the outdoor environment to the front-country. This final relationship is one of the most important frontiers in adventure education research. The next section discusses learning transfer, which factors may influence learning transfer, and how educators can program directly for learning transfer.

Learning Transfer

> *Transfer of learning is universally accepted as the ultimate aim of teaching. However achieving this goal is one of teaching's most formidable problems. Researchers have been more successful in showing how people fail to transfer learning than they have been in producing it, and teachers and employers alike bemoan students' inability to use what they have learned.*
> (McKeough, Lupart & Marini, 1995, p.vii)

Learning transfer is a psychological construct that, in general, describes how learning by a student is transferred from one context to another. It is also commonly called transfer of learning, transfer of training, transference, or simply transfer. Transfer of learning takes place in multiple domains, such as knowledge, attitudes, or skills. An example of the transfer of cognitive ability occurs when a student is able to use the arithmetic skills learned in a classroom to estimate the time it takes to drive to a given location. An example of the transfer of kinesthetic ability may transpire when a

skateboarder snowboards for the first time. She may be able to transfer balance and movement skills learned from skateboarding to glide down snow slopes. Several researchers have described learning transfer as the ultimate goal of learning (McKeough et al., 1995; Mestre, 2005). Exactly what "learning transfer" is, though, and how educators can best program for it is hardly agreed upon. Both the historical and modern constructions of learning transfer are highly disputed (Detterman, 1993).

The following section describes several key aspects of learning transfer, including definitions of transfer, types of transfer, theoretical explanations of transfer, and what instructional mechanisms might influence and optimize transfer. Along the way, it sheds light on the controversy regarding transfer and discusses many key pieces of transfer literature.

Defining Learning Transfer

The many definitions of learning transfer that are employed by various researchers have two things in common. First, they appear to be very similar. Second, the structure of the construct and consequent operationalization are greatly influenced by the subtle differences found within the definitions (Ford & Weissbein, 1997). A critical examination of the definitions is imperative because they lay the foundations for the theories, practical implications, application and research endeavors that follow from them (Ford, 1994).

The classical definition of transfer, which draws from the stimulus-generalization model of transfer, is summarized by Detterman (1993, p. 4) as "the degree to which behavior will be repeated in a new situation." This is characteristic of the *direct application* view of transfer. Other examples of this definition include "learning transfer

occurs when a person applies previous experience and knowledge to learning or problem solving in a new situation" (Santrock, 2001, p. 306), and transfer is "the application of knowledge or skills in situations other than that in which the skill was initially acquired" (Winzer & Grigg, 1992, p. 452). Defining transfer as an application of skills is an attractive option because it is most easily operationalized and quite practical. However, it may not fully describe the process by which people use previously learned knowledge when solving new problems.

Several authors suggest that expanding the definition of transfer is necessary. Schwartz and his colleagues suggest that expanding the direct application view of transfer is necessary and that even a "flexible adaptation of old responses to new settings" is still too narrow (Schwartz, Bransford, & Sears, 2005, p. 5). These researchers argue that previous studies of learning transfer have focused solely on sequestered problem solving. An alternative to the direct application view of transfer and the sequestered problem-solving assessment is to include *preparation for future learning*. To address this issue, more expansive definitions of transfer describe the process by which previously learned knowledge assists future learning and/or performance. Ormond (2003, p. 273) regards transfer as "when something students have previously learned affects how they learn or perform in another situation," and similarly, McCowan et al. (1999, p. 369) explain that transfer "refers to the influence of learning something in one situation on learning in other situations." A similar definition of transfer suggests that it occurs "whenever something previously learned influences current learning or when solving an earlier problem affects how you solve a new problem" (Mayer & Wittrock, 1996).

It is important to point out the ambiguity between transfer of *learning* and transfer of *training*. Both concepts are used somewhat interchangeably in the literature, although some authors have noted differences (e.g., Cormier & Hagman, 1987; Moon, 2001). Learning is a more general concept involving a number of processes such as abstraction, analogical reasoning, generalization, logical inference, and induction (Haskell, 2001), whereas training is a more specific, focused activity where the expectations for direct transfer are more explicit. Baldwin and Ford (1988) suggest that transfer of training involves the application of knowledge, skills, and attitudes learned from training and successive maintenance of them over a certain period of time. Many researchers use the terms interchangeably (e.g., Caffarella, 1994; Cormier & Hagman, 1987; Detterman, 1993), noting that the transfer of training is the application of learning responses. It may be that many training tasks are more likely to use "low-road" transfer, which requires less creative cognition (see below for a description of different types of transfer).

The distinctions between the two concepts are perhaps largely semantic, as they involve the same processes. It may be that transfer of training, if looked at from a human resource development perspective, is explicitly outcome-focused because training dollars spent by an organization are meant to improve organizational assets (e.g., employee performance). Thus, transfer of training is largely outcome-based, adult-oriented, and career focused. Transfer of learning may or may not be outcome-based, is often youth-centered, and the focus is on learning rather than immediate job performance. Regardless, if behavior change is the eventual outcome, they may employ the same cognitive processes and motivations.

Types of Transfer

Given that transfer is a complex process involving many different factors (Baldwin & Ford, 1988), it is of no surprise that the general concept has been defined in greater detail. A number of different types of transfer exist, from relatively simple *near transfer* (which might be, plainly, just called learning) to the more complex, such as *high-road transfer*.

(a) *Near transfer*—refers to circumstances where acquired skills are applied in new ways that are very similar to the original leaning situation (McCowan, et al 1999). For example, when a trigonometry teacher instructs students to solve an equation and then tests the students on their ability to solve a similar equation, near transfer has occurred. Near transfer is most likely the objective of short-term skill development that will produce immediate results in one's job performance (Spitzer, 1984) and the most desired when engaging in technical training (Laker, 1990).

(d) *Far transfer*—refers to circumstances where the skills are applied in situations that are quite different to the original learning situation (McCowan et al. 1999). For example, if a student attains a job as a drafter and is able to apply the trigonometry skills to design blueprints, then she is demonstrating far transfer. Far transfer more often involves the learning of principles, relies on generalization, and explains the *why* behind the learning (Yamnill & McLean, 2001).

(e) *Metaphoric transfer*—metaphor and analogies provide a means for transferring existing declarative knowledge to the learning of new declarative knowledge (Fetsco & McClure, 2005). Metaphoric transfer takes place when a student cognitively understands that a specific learning context is parallel to a context of application (Haas & Sibthorp, 2004).

(a) *Vertical transfer*—describes complex learning that builds upon simple learning that was learned early (McCowan, et al 1999).

(b) *Lateral transfer*—describes transferring learning from one situation to another situation that is equally complex or less so than the first (McCowan, et al 1999).

(f) *High-road transfer*—involves "the explicit conscious formulation of abstraction in one situation that allows making a connection to another" (Saloman & Perkins, 1989, p. 118). High road transfer is conscious and mindful. For example, when trigonometry students are trained to solve a problem in a

methodological manner, they may be able to transfer the methodology from math problems to solving physics questions.

(g) *Low-road transfer*—uses the "spontaneous automatic transfer of highly practiced skills with little need for reflective thinking" (Saloman & Perkins, 1989, p. 118). For instance, when competent trigonometry students encounter a problem that is the same as ones solved previously yet uses original numbers, students automatically find a solution for the problem.

(h) *Forward-reaching transfer*—occurs when a student looks forward to applying the knowledge gained (Woolfolk et al., 2000).

(i) *Backward-reaching transfer*—happens when a person is faced with a problem and looks back on past situations to find skills that will help the person solve the problem (Woolfolk, Winne, & Perry, 2000).

(j) *Positive transfer*—this type of transfer takes place when something that a person has learned in the past helps that person learn in a new situation (Ormond, 2003).

(k) *Negative transfer*—this type of transfer occurs when something that a person has learned in the past obstructs a person's learning at a later time (Ormond, 2003).

(l) *Specific transfer*—occurs when the learning duty and transfer duty overlap in content (Ormond, 2003).

(m) *General transfer*—occurs when the learning from one past situation affects learning and performance in an unrelated situation (Ormond, 2003).

Clearly, transfer has been constructed and defined in a number of ways. The two types of transfer that have permeated the literature to the greatest extent are near transfer and far transfer. Far transfer is considered much harder to achieve (Barnett & Ceci, 2002). It is also worth noting that several of these types of transfer regard dimensions of transfer differently. For example, near transfer and far transfer describe ultimate transfer outcomes but metaphoric transfer is a process that facilitates transfer. It is possible that several of these types of transfer can interact at the same time. For instance, a student

may attain far transfer through high-road processes when the learning was primed through the use of metaphor.

It seems likely that even more types of transfer will continue to grow as researchers look at transfer in new ways. Haskell (2001) described three additional types of transfer: application transfer (applying what one has learned to a specific situation), context transfer (applying what one has learned to a slightly different situation), and creative transfer (in the interaction between the new and old context something new is created). Volet (1999) devised a model that included appropriate transfer, ambivalent transfer, difficult transfer, and inappropriate transfer. Considering the many types of transfer that have been described, a universal theoretical explanation of transfer awaits synthesis, despite a call from authors (e.g., Haskell, 2001) for the need.

Theoretical Explanations of Transfer

The controversies surrounding transfer have existed since the turn of the 20th century. When Thorndike (1903) began to look at transfer and suggest that identical elements between contexts played a major roll in the transfer of learning, Judd (1908) quickly developed a different hypothesis involving abstraction and generalization that did not rely on the identical elements model proposed by Thorndike. In the past twenty years, and echoing the initial controversy between the early 20th century psychologists, researchers have found more to disagree about than they have found to agree on. Consequently, theoretical explanations of transfer, like many contested theories, do not lend themselves to a quick appraisal.

To gain an understanding of the competing ideas surrounding transfer, it is useful to examine the explanation of the problem by Fogarty, Perkins and Barrell (1991). These

researchers described a model consisting of three different theories: the "Bo Peep" theory, the "Black Sheep" theory, and the "Good Shepard" theory. The "Bo Peep" theory (e.g., Bereiter, 1995) optimistically suggests that transfer is likely to follow from any true learning, whereas the "Black Sheep" theory (Detterman, 1993; Haselrud, 1972) maintains that transfer is not a likely outcome of learning as a result of educational strategy and should be ignored. The "Good Shepard" theory (DeCorte, 1995; Gass, 1999; Haskell, 2001) falls somewhere between the other two and asserts that transfer can be maximized if it is explicitly programmed. Holton and Baldwin (2003), major contributors to the understanding of transfer, state "we believe that transfer can greatly influenced by intervention" (p. 6). Although the explanation of Fogarty et al. lacks comprehensive insight on the problem, it does summarize the various perspectives on transfer nicely. It also provides context for discussing the historical perspectives on transfer.

The ***formal discipline*** approach to transfer posited that practicing mental faculties such as memory, attention, and judgment by studying rigorous disciplines such as mathematics and Latin would facilitate a person's ability to learn other subjects. (Mayer & Wittrock, 1996). Rippa (1971, p. 208) described the formal discipline approach thusly: "A mind so sharpened and so stored with knowledge was believed ready for any calling; indeed, it was considered 'trained' and equipped for life. Thus…transfer of training resulted from sharpening the 'faculties' or powers of mind, instead of from the specific benefits derived from a particular subject or method of study." Presently, the formal discipline concept is largely seen as an unworkable model in most cases (Perkins & Saloman, 1989; Thorndike, 1923), although some authors have suggested that the formal discipline model might have some explanation value when identical elements overlap.

The ***associationism*** model draws strongly from the behavioral approach (e.g., stimulus/response) to transfer and was first developed in response to the formal discipline model. Thorndike and Woodworth (1901) stated that transfer would occur to the extent that different contexts featured identical elements. Judd (1908) posited the general principle model (Haskell, 2001) which expanded on the identical elements model by saying that generalizations could transfer as well as long as students could form abstractions from a learning context. Ormond (1998, p. 401) noted that the behavioral approach is based on four different principles:

1. Maximum positive transfer occurs when stimuli and responses in the two situations are similar. (Learning two similar languages such as Italian and Spanish.)
2. Some positive transfer occurs when stimuli are different but responses are similar. (When a student learns a lesson during a training and then uses it in the classroom setting.)
3. Negative transfer occurs when stimuli are similar but responses are different. (A student learns a skill associated with working in groups but this subsequently interferes with her level of responses needed to work individually.)
4. No transfer occurs when stimuli and responses are both different. (The learning of physical responses will not assist a student to develop better learning techniques in a classroom.)

Thorndike and Woodworth's model has been criticized (e.g., Haskell, 2001) because it maintains that transfer is a product that is external to the learner and does not incorporate the cognitive processes that learners engage in. Judd's expansion upon Thorndike's work addresses this issue, in part, because it involves the learner in the transfer process.

A ***gestalt*** perspective to transfer was developed in response to the behaviorism model (Leberman, McDonald, & Doyle, 2006). "The gestalt perspective argues that behavior is only understandable in terms of total responses in relation to the natural or laboratory environment, rather than as simple stimulus-response sequences" (Cox, 1997,

p. 42). Drawing from the work of Judd (1908), Katona (1940) and Wertheimer (1959) were the first to empirically demonstrate that the transfer of general principles from one context to another is possible. For instance, one experiment by Katona (1940) showed that students who were taught to solve card trick problems by use of general principles were more successful at solving future card trick problems than students who were only taught the exact way of solving a specific problem. The gestalt perspective did not seek to discredit the findings of previous researchers (e.g., Thorndike), but to expand upon them. Considering the types of learning studies by associationist researchers, Katona (1940) said that "learning by memorizing is a different process from learning by understanding" (p. 53).

The ***cognitive science*** view of transfer represents present day thinking and seeks to acknowledge the previous three viewpoints (Cox, 1997; McDonald, 2001). Cognition generally employs such faculties as reasoning, perception, intelligence, attention, memory, knowledge representation and retrieval (Sternberg, 2005). Learners are active participants in the learning process, and to the extent that they can monitor their own learning, metacognition plays a significant role (McDonanld, 2001).

Drawing from the work of cognitive psychologists, recent authors have found little to agree upon regarding transfer. Butterfield, Slocum, and Nelson (1993) believe that there are no significant differences between transfer and learning. Like-minded, Detterman (1993) suggests that transfer cannot be increased by instruction, while many others (e.g., Gass, 1985; Haskell, 2001; Walberg & Genova, 1982; Yelon, 1992) explicitly outline how to teach for transfer. Authors such as Holton, Bates, and Ruona (2000) have developed specific outcome measures to evaluate transfer while others

(Foxon, 1994; Yelon, 1992) believe that transfer evolves over a period of time and cannot be dependably determined by a terminal outcome measure only. Both Cox (1997) and Haskell (2001) have concluded that the theoretical perplexity leaves researchers and practitioners wondering "what do we mean by transfer?"

In light of the preceding discussion, it seems clear that transfer of learning is a complex, multifaceted construct that lacks an over-arching, general theory. Nonetheless, it is equally clear that transfer does exist and is a significant outcome of learning. It also becomes evident that the Fogarty et al. (1991) description of a Good Shepard/Bo Peep/Black Sheep description of the problem has merit. While some authors would disagree that transfer can successfully be increased intentionally, others have made progress at describing the different factors that can influence transfer. The next section examines these different influences of learning transfer.

Transfer Influences

Baldwin and Ford (1988) conducted a review of the transfer literature and argued that the three primary influences upon transfer are training characteristics, trainee attributes, and the work environment. This study generated a significant deal of interest in transfer as it summarized a vast body of literature into an easily digestible form. Since that time, three other major literature reviews have used the same organization of concepts (Burke & Hutchins, 2007; Cheng & Ho, 2001; Ford & Weissnein, 1997).

Holton expanded on Baldwin and Ford's conceptualization of transfer influences and referred to trainee characteristics in terms of motivation. Holton's model of transfer of training (1996) identifies three critical factors that affect transfer: motivation to transfer, transfer climate, and transfer design. Motivation to transfer is influenced by

intervention fulfillment, learning outcomes, job attitudes, and expected utility (Holton, 1996). *Intervention fulfillment* considers how much the training meets or fulfills employee expectations. Support for this claim comes from Tannenbaum, Mathieu, Salas, and Cannon-Bowers (1991). These authors determined that the extent to which training was fulfilling was significant in understanding training motivation. Contrarily, Ruona and her colleagues found that participant reactions to training do not seem to contribute significantly to predicting transfer or increased job performance (Ruona, Leimbach, Holton, & Bates, 2002). Individuals who achieved higher *learning outcomes* from training programs were also more motivated to transfer them to the workplace (Tanenbaum et al., 1991). Less successful learners were less motivated to transfer learning (Holton, 1996). Individuals reporting more positive *job attitudes* (Noe & Schmidt, 1986; Seyler et al., 1998; Tanenbaum et al., 1991) reported more motivation to transfer. *Expected utility* of the training also played a role in motivation to transfer training (Clark, Dobbins, and Ladd, 1993). A study by Seyler et al. (1998) found that work environment factors (opportunity to use, peer support, supervisor sanctions, and supervisor support) played a large role in motivation to transfer.

A number of studies have examined Baldwin and Ford's idea that work environment (similarly called transfer climate) can greatly effect a person's ability to transfer learning to job outcomes (Huczynski & Lewis, 1980; Tracey et. al., 1995; Xiao, 1999). Roullier and Goldstein (1993) go as far as to say that it may be as important as the training itself. Transfer climate can be understood to be how organizational environments support or inhibit the transfer of newly acquired skills. From Baldwin and Ford's perspective, transfer climate can be organized under their work environment

category, and is seen as a "mediating variable in the relationship between organizational context and an individual's job attitudes and behavior" (Ruona et al., 2002). Two sets of cues—situation cues and consequence cues (cues are subsequently organized into eight dimensions)—describe how transfer climate impacts the transfer of training (Rouiller & Goldstein, 1993). Situational cues remind employees to use new skills and consequence cues are the feedback received after transferring new skills.

More recent work from Holton and colleagues (2000) culminated in the development of the Learning Transfer System Inventory (LTSI). This measure looks at 57 different factors that affect the transfer of training. Some of these factors are learner readiness, motivation to transfer, peer support, supervisor support, positive personal outcomes, negative personal outcomes, supervisor sanctions, content validity, transfer design, personal capacity to transfer, opportunity to use, performance self-efficacy, transfer effort-performance expectations, performance-outcomes expectations, feedback, and openness to change. Donovan, Hannigan and Crowe (2001) suggest that this is a step forward in assessing the effectiveness of training programs and their relationship to transfer. The results of this instrument provide evidence that a great number of different factors influence learning transfer.

Instructional Mechanisms of Learning Transfer

The preceding section suggested that there are several different factors that influence learning transfer—broadly speaking, characteristics of the training, characteristics of the trainee, and characteristics of the transfer context. From these three general influences, researchers have identified specific strategies that are likely to facilitate transfer. In this study, these are referred to as transfer mechanisms, and include

the methods that instructors may use to maximize potential transfer. These mechanisms are extremely important, because compared to the dynamics that educators cannot easily account for (e.g., participant intelligence or motivation), they point to the factors that can be used in educational design.

Given the substantial number of authors who suggest mechanisms of transfer, it should come as no surprise that some of these mechanisms overlap. For instance, ideas about overlearning and deep learning share several similarities, as do the concepts related to analogical thinking, metaphor use, and "as if" situations. The following section examines 1) experiential learning/action-reflection models, 2) journaling, 3) active learning, 4) feedback, 5) analogy/metaphor/"as-if" structures, 6) principle-based learning, 7) fidelity and framing, 8) overlearning and deep learning, 9) goal setting, and 10) action plans as mechanisms for transfer. It also re-introduces the role of the transfer context as a mechanism for transfer. However, the extent to which this mechanism can be influenced by instructional design is limited.

Interestingly, and significant for this study, a number of mechanisms suggested by researchers are variants upon the theme of Kolb's (1984) experiential learning theory. Gardner and Korth (1997) suggest that:

> Individuals can use Kolb's experiential learning cycle to enhance the transfer of learning from one situation to another. The cycle itself implies that experience itself is the springboard for new learning. The last phase of Kolb's cycle, active experimentation, involves developing a plan for the application of this learning in novel situations. (p. 48)

Yorks and colleagues implemented an "action-reflection" model of learning in which team members work together towards a common goal, then have a series of reflection periods to assess "new insights…new data and a fresh cycle of reinterpretation" (Yorks et

al., 1998, p. 60). The researchers determined that participants in the learning program developed deeper learning and greater transfer than they would have otherwise.

Journaling is one type of reflection activity that provides an opportunity for students to develop new insights and decrease the distance between contexts. Cyboran (2005) claims that active reflection through journaling has demonstrated improvements in learning, job performance, empowerment, and skill transfer. Carver, Price, and Wilken (2000) found that journaling activities increased the transfer of learning in elementary, middle school, and high school students compared to students who did not journal. Scanlon and Chernomas (1997) claim that journaling works because journals (a) raise the awareness of the knowledge, (b) allows for critical analysis of an event and how the event relates to previous ideas and practice, and (c) can give way to a new perspective of thoughts, feelings, and behaviors. This is consistent with the conventional view within adventure education. Luckner and Nadler (1997) suggest that journal writing is a powerful tool because "without the threat of criticism by an external audience, individuals are free to concentrate on and explore their thoughts and feelings" (p. 118). Other authors (Gilbertson et al., 2006; Martin et al., 2006) agree, suggesting that journals are a way of reinforcing lessons and creating personal meaning.

Active learning techniques are thought to facilitate the transfer of learning (Cox, 1997; Mayer & Wittrock, 1996), perhaps because they maintain attention spans more so than lecture (Burke & Hutchins, 2007). It has long been thought that active learning leads to greater learning (Meyers & Jones, 1993) and that greater learning leads to increased transfer (Haskell, 2001), however this has not been empirically demonstrated. Mayer and Wittrock (1996) suggest using a particular type of active learning called

"discovery method" where instructors guide students to discover a principle has the potential to facilitate transfer. Burke and Hutchins (2007) call for researchers to investigate the relation of active learning to transfer in greater detail.

Providing feedback is another instructional mechanism linked to both Kolb's model and transfer (Burke & Hutchins, 2007; Gardner & Korth, 1997; Yorks, Lamm, & O'Neil, 1999). Lee and Kahnweiler (2000) found that providing feedback to participants with reinforcement and remediation opportunities resulted in significantly higher transfer scores on a specific work task. It is likely that providing meaningful feedback gives students the opportunity for new insights that can later be tested.

Several authors suggest that the use of metaphor and analogical thinking can facilitate transfer (Alexander & Murphy, 1999; Gick & Holyoak, 1983; Mayer & Wittrock, 1996). The use of metaphor is linked to transfer because in both instances participants must apply what they know in one situation, assess similarities and differences between the two situations, and make a cognitive link to approximate the two. Gass (1985; 1999) and Luckner and Nadler (1997) claim that intentional use of reflection activities using metaphor can facilitate transfer. Gass and Priest (2006) used a specific type of metaphor construction, an isomorph, to increase transfer durability significantly compared to groups that relied on traditional metaphor only.

Although not strictly metaphor-based, Vermeulen (2002) suggests using "as if" situations to foster transference. "In an 'as if' situation in training, the actual reality of the here-and-now (training) is transformed into a symbolic reality. This transformation takes place by reframing: a subframe is activated in time and space within the social framework of the training. Within the training framework people agree on acting 'as if'

the symbolic reality of the subframe were the actual reality" (p. 370). Vermeulen recommends several types of "as if" experiences, including role playing, imaging/visualization, and scenario-based presentations.

Engaging learners in principle-based learning rather than context-specific learning should also have an affect on transfer (Murphy & Woods, 1996). For instance, "knowledge that is taught only in a single context is less likely to support flexible transfer than knowledge that is taught in multiple contexts" (Bransford, Brown, & Cocking, 1999, p. 78). Further, "when students possess principled knowledge in a domain, the central concepts within this domain can function as the course or grounding for analogical reasoning" (Alexander & Murphy, 1999, p. 563).

The relation of context fidelity and framing to transfer is worth noting. As discussed earlier, for transfer to take place the learner must apply skills learned in one context to a different context. Holton and Baldwin (2003) call this the "transfer distance" and suggest that it is a major problem in transfer. Engle (2006) suggests that "transfer is more likely to occur to the extent that learning and transfer contexts have been framed to create what is called *intercontextuality* between them" (p. 456). Educators interested in fostering transfer should consider how to frame experiences so the contexts have similarities (Burke & Collins, 1998; Engle, 2006).

Overlearning is a technique that may promote transfer as well (Burke & Hutchins, 2007; Cordeiro, Kraus, Hastings, & Binkowski, 1997; Russ-Eft, 2002). Overlearning means that skills must be further demonstrated even after they have been effectively demonstrated once. For instance, CPR classes require that students rehearse techniques past the point of demonstrating them once. It was hoped that this will "etch" outcomes

into motor learning and future replication fidelity can be attained. Murphy and Tyler (2005) found that students who engaged in "deep learning" activities were more likely to transfer knowledge about management to the job than those who did not. Deep learning is associated with seeking meaning, relating ideas, use of evidence, and interest in ideas. Of the four domains of deep learning, interest in ideas was most associated with learning transfer. Deep learning is different than overlearning, of course, but both concepts place emphasis on mastery more than singular demonstration.

Goal-setting is thought to be a significant way of facilitating transfer (Gass, 1999; Noe, Sears, & Fullenkamp, 1990; Yamnill & McLean, 2001). Yorks, Lamm, and O'Neil (1999) suggest that instructors "can work with participants to develop goals prior to the start of an action learning program. Participants can be encouraged to reflect on these goals throughout the program and set subsequent goals for continuation of learning following the program" (p. 62). Both Wexley and Baldwin (1986) and Gist, Bavetta, and Stevens (1990) found that trainees who set goals were able to transfer more knowledge than trainees who did not. Similarly, Lee and Pucil (1998) determined there was a significant relationship between having trainees set goals with their manager prior to a training and perceived transfer of training.

Several authors suggest that action planning can help increase transfer of learning (Campbell & Cheek, 1989; Foxon, 1994; Stroul & Schuman, 1983; Trost, 1985; Yamnill & McLean, 2001). An action plan is a structured form of goal setting in which a person evaluates several factors to infer a course of action to meet a goal. Van der Klink, Gielen, and Nauta (2001) used action plans as a primary mechanism of increasing transfer of training for bank tellers. The study concluded that the more time employees

spent developing their action plan the greater the transfer. Foxon (1994) recommends an action plan for transfer where students fill out the (a) situation description, (b) what the student would normally do, (c) what the student will do differently, (d) how performance will be gauged, (e) potential obstacles to the students plan, and (f) how these obstacles will be dealt with.

One significant factor contributing to transfer is the role of transfer climate. The climate may or may not be optimal for students to achieve transfer, however the roll of supervisory support is key for optimizing the transfer climate (Brinkerhoff & Montesino, 1995; Broad & Newstrom, 1992; Clarke, 2002). Discussions with supervisors about using new learning, supervisor's involvement in training programs, and positive feedback from supervisors were all ways in which trainees recognized supervisory support (Lim & Johnson, 2002). Education programs have limited ability to influence the transfer climate because the climate exists after the training in completed.

The previous ten factors suggest mechanisms that may influence the transfer of learning. These factors are: 1) experiential learning/action-reflection models, 2) journaling, 3) active learning, 4) feedback, 5) analogy/metaphor/"as-if" structures, 6) principle-based learning, 7) fidelity and framing, 8) overlearning and deep learning, 9) goal setting, and 10) action plans as mechanisms for transfer. It also briefly explained the relevance of transfer context and supervisory support. Depending on specific program constraints, however, this mechanism may or may not be influenced by educational design or instructional method the way the previous ten can be.

Interestingly, many of the mechanisms recommended by researchers are already incorporated into adventure education programs. Experiential-learning/active-reflection

models, active learning, and opportunities for feedback are already structures in place for many programs. How well these structures are implemented varies, of course, and whether these transfer mechanisms are used optimally is not known. Further, it is likely that the intensity of the adventure experience leads many to achieve deep learning about a subject. Thus, incorporating these mechanisms into a treatment curriculum could be redundant.

Summary of Learning Transfer

The preceding discussion of learning transfer examined definitions, types, and theoretical explanations of transfer. Two of the most consistent types of transfer are near and far transfer. Near transfer occurs when the contexts of learning and application are very similar. Intuitively and empirically far transfer takes place when the contexts between learning and application are quite different. Different fields have approached the study of transfer differently. For instance, cognitive and educational psychologists have focused the on the extent to which people are capable of transfer. Human resource development, on the other hand, has focused on which variables effect transfer, particularly those that can be influenced by educational design and transfer context. The different needs and interests of these two fields have largely determined research strategies.

This section of the chapter also assessed which factors may contribute to maximizing transfer. Despite having been authored two decades ago, the most significant contribution to the study of transfer variables comes from Baldwin and Ford (1988). Their idea that the characteristics of the trainer, characteristics of the trainee, and transfer climate/organizational support has remained the predominate framework for studying

transfer influences. Within these transfer influences, several explicit transfer mechanisms have been offered that may facilitate increased transference.

Clearly, there is significant disagreement over whether transfer is a discrete outcome or a process, how it should be measured, and what educators can do to influence it (Detterman, 1993; Foxon, 1994). Recently, authors have called for a broader construction of transfer (Barnett & Ceci, 2002; Lobato, 2006) that may have significant consequences for measurement. An explicit assumption of this dissertation, and consistent with the ideas of major researchers in the field (e.g., Holton & Baldwin, 2003) is that both near and far transfer can be influenced by educational design.

When considering which factors are most likely to increase transfer among adolescents participating in an adventure education program, some become more promising and logistically attainable than others. For instance, journaling, goal setting, and action planning would be relatively simple mechanisms to incorporate into adventure education, whereas the overlearning of an objective may defy the recreational aspect of a program. Most adventure programs are intended to be fun as well as educational, and mandating structured overlearning could interfere with that balance. Using "as if" structures to increase transfer may hold promise. By using case studies, guided journaling assignments, and "as if" situations when developing action plans, students may be able to form connections around their learning in a way that overcomes the contextuality of the outdoor expedition. In addition, using goal setting structures may provide an additional opportunity for meaningful feedback about a topic.

Considering the importance of supervisory support in optimizing a transfer context, it seems important to attempt to influence the transfer climate. By contacting

parents, sharing with them what their child is learning, and encouraging them to discuss what they learned on their adventure education course, it could open the door to additional reflection, learning, and insights from the student.

The preceding two sections looked at adventure education and learning transfer. The next section describes a learning outcome that may be learned and transferred from adventure education courses. This variable, called expedition behavior, can also be conceptualized as prosocial behavior. Expedition behavior is one of the major learning objectives during adventure education adolescent backpacking courses.

Prosocial and Expedition Behavior

Prosocial behavior can be defined as behaviors that are primarily aimed at benefiting others (Carlo et al., 2007; Eisenberg & Fabes, 1998; Staub, 1978). These behaviors are often described as sharing, comforting others, donating goods or money, volunteerism, and instrumental helping (Carlo et al., 2007). It is often linked to ideas of ethics, morality, moral development (e.g., Kohlberg, 1984), prosocial reasoning (Eisenberg, 1982), and altruism (Rushton, 1980). In past years prosocial behavior has been used almost synonymously with altruistic and helping behaviors, however more recently each of these constructs has become more distinct.

The empirical study of prosocial behavior and development began in earnest in the 1970s. By 1984, Bar-Tal (1984) noted that approximately 2% of the articles from the last decade in the two premier developmental psychology journals were about prosocial behavior. While the field is still in its infancy (Eisenberg & Fabes, 1998), it continues to refine the understanding of how prosocial behaviors are developed throughout the course of childhood, what the dimensions of the construct are, and how they are best measured.

Recent research has, notably, made progress in assessing what the determinants of prosocial behavior are and how prosocial development can be attained.

A general shift in the construction of prosocial behavior seems to have taken place over the last two decades. Circa 1980, much of the literature about prosocial behavior was linked to ideas of altruism (e.g., Krebs, 1982; Rushton, 1980; Underwood & Moore, 1982). As researchers further refined the construct of altruism, it became clearer that altruistic behavior was only a part of prosocial behavior. Bierhoff (2002) claims that altruism is a particular type of prosocial behavior, and that prosocial behavior is a particular type of helping behavior.

Motivations for engaging in prosocial behavior are varied, from receiving positive recognition, to soothing personal distress, to reinforcing self-concept (e.g., Carlo & Randall, 2002). The question of "why people help" has been determined to be a function of (a) learning, (b) social and personal standards, and (c) arousal and affect (Penner et al., 2005). These motivations differ notably from the notion of altruism, which may be defined as "actions taken to benefit another for reasons other than intrinsic reward" (Cialdini, Kenrick, & Baumann, 1982). This may bode well for the learning of prosocial behavior, because, as Rushton (J. P. Rushton, personal communication, Septermber 26, 2007) evaluates, altruistic behavior is about 50% trait-based.

The following section of this chapter deals with several concepts linked to prosocial behavior, including why prosocial behavior is a reasonable proxy for expedition behavior, the relevance of prosocial behavior in youth, how prosocial behavior is developed, and, lastly, how it has been measured.

Expedition Behavior

Expedition behavior is a concept used in many adventure education programs. Paul Petzoldt, the founder of the National Outdoor Leadership School (NOLS) and the Wilderness Education Association (WEA) is credited with coining this term. Broadly speaking, expedition behavior is a concern for others, coupled with the willingness to demonstrate this concern through action. According to Petzoldt, "Good expedition behavior is an awareness of the relationships…which exist in the out-of-doors plus the motivation and character to be as concerned for others as one is for oneself" (Petzoldt, 1984, p. 168). Petzoldt states that many expeditions succeed or fail based on the behavior of individuals and the regard they demonstrate (or lack there of) for their teammates.

The utility and implications of this concept are manifold. On one hand, expedition behavior is a term used by outdoor instructors for the purpose of framing social expectations of group members. The connotation of the word implies that there is a certain set of behaviors that is appropriate for engaging in when part of an expedition. The ability to act as a team, behave decently towards one another, and support group goals are highly desirable in an intense outdoor and social environment where liabilities include physical and emotional risk. Instructors are able to frame the relevance of expedition behavior around expedition success. Thus, the burden of the ultimate success or failure of the expedition becomes shared by group members.

The term also serves as a structure for providing feedback. Providing feedback is an integral part of Kolb's model of experiential learning and a transfer mechanism. When instructors provide feedback to students about the students' expedition behavior, they are essentially discussing how behaviors relate to the overall social health of the

team. The implications of poor expedition behavior may affect students ability to lead or communicate effectively. It may also ultimately affect their ability to form meaningful relationships with peers and success during the course.

There is a critical distinction to be made in the construction of what is, and what is not, expedition behavior. Several authors have suggested that expedition behavior skills are also called process skills, soft skills, or people skills (Harvey, 1999) or that they describe the universe of "interpersonal relationships and interactions on an outdoor program" (Kosseff, 2003, p. 184). Expedition behavior has long been thought of as comprising an attitudinal component. The distinction to be made is the one of definition and implications. Good expedition behaviors are behaviors that are prosocial in nature and take place during an outdoor expedition. The implications of good or poor expedition behavior can affect interpersonal relationships, process-oriented skills (also known as "soft skills"), people skills, and possibly the outcome of the expedition, but these things are neither expedition behavior nor characteristics of it.

John Gookin, the curriculum director at NOLS, recently described examples of expedition behavior as "helping a fellow student get through a rough day by carrying some of their weight, turning back due to bad weather, bringing your tentmate a hot drink, or keeping a smile on your face during five days of torrential rains are just a few examples of expedition behavior" (Gookin, 2006). These examples are similar to prosocial behaviors because they are behaviors engaged in helping someone other than self.

Thus, good expedition behaviors are quite similar to prosocial behavior—it is possible that the primary distinction between the two is the context in which they take

place. Further, it seems reasonable to measure the transfer of backcountry expedition behavior as frontcountry prosocial behavior.

Expedition behavior has been measured as a subscale of the NOLS Outcome Instrument (Sibthorp et al., 2007). The NOLS Outcome Instrument (NOI) measures each of the six NOLS learning objectives, as well as individual- and group-level factors. The five-item expedition behavior subscale features a Cronbach's alpha of .79. One sample question is "I place emphasis on group goals more than personal goals."

Relevance of Prosocial Behavior in Youth

Much of the literature on prosocial behavior has not dealt with the issue of relevance. This exclusion is understandable. Prosocial behaviors, by their very definition, are considered beneficial and thus they are assumed to be relevant. This viewpoint is best expressed by Bar-Tal (1984), who states, "no one can deny the importance of helping behavior for the individual, group, or society" (p. 21). Further, prosocial behavior has been traditionally linked to altruism, which reinforces the nominal relevance of the subject. Solomon and colleagues note that prosocial behavior is a significant issue due to "inadequate levels of social responsibility and concern for others' welfare, accompanied by excessive self-centeredness and social alienation" (Solomon et al., 1985). The authors continue by suggesting that these problems may lead to increased vandalism, violence, delinquency, and school discipline problems. Bar-Tal (1984) suggests that the "existence of helping behavior indicates adaptation of people to the social environment. Helping behavior can facilitate human living and improve human relations" (p. 21).

As Bar-Tal (1984) reports, it is interesting to consider that most of the research on prosocial behavior has been conducted in the United States, one of the most individualistic countries in the world. Does this contribute to why researchers consider prosocial development important? It may be that an individualist mindset makes people less likely to engage in behaviors that are less likely to have benefit to themselves. Slater (1970) notes:

> It is easy to produce examples of the many ways in which Americans attempt to minimize, circumvent, or deny the interdependence upon which all human societies are based. We seek a private house, a private means of transportation, a private garden…Even within the family Americans are unique in their feeling that each member should have a separate room, and even a separate telephone, television, and car, when economically possible. (p. 7)

These individualistic assumptions and behaviors may well speak to why the study of prosocial behavior has been a predominantly American phenomenon (Bar-Tal, 1984). Sampson (1977) suggests that American individuality has several costs:

> Excessive individualism leads to alienation and estrangement; it isolates person from person; it separates us from the very nutrient soil out of which we were cast in the first place. Interdependence is inbred early as we form our basic attachments to parents and others; yet we see the breakdown of those attachments espoused as an ideal in the island-like ethos of our contemporary culture. (p. 780)

In light of these costs, the relevance of prosocial behavior, and the development of those behaviors, becomes more significant.

Both religion and philosophy provide a historical context for prosocial behavior. Many of the world's religions have doctrines that are remarkably similar to the definitions of prosocial behavior. Eisenberg and Fabes (1998) note that the doctrine "Thou shalt love they neighbor as thyself" is consistent with Judaism and Christianity, and also consistent with prosocial behavior. The Dalai Lama has remarked that altruism and compassion are fundamental tenets of Buddhism (Eisenberg & Fabes, 1998).

Philosophers have invested much thought to the concept of ethical egoism, the argument that it is unjust for a person to act in a way that is not in there own personal interest. However, both Rousseau and Kant refuted this concept. Rousseau believed that human nature was essentially good and that they feel a sense of obligation towards one another (1773/1962). Kant believed that ethical action was independent of personal motivations. Whether the action was to benefit the actor or another individual, it could not be determined ethical or not (1785/1956). Further, Eisenberg and Fabes (1998) suggest that David Hume "argued that moral emotions such as sympathy, benevolence, and concern for humanity are fundamental incentives of human action and that prosocial behaviors often are based on those incentives" (p. 703). More recently, it is thought that Kohlberg based his model of moral development on the writings of Kant (Eisenberg, 1986). Subsequently, much of the prosocial behavior literature is founded on the assumptions of Kohlberg.

While contemporary literature focuses more attention on how prosocial development is achieved, rather than justifying it, the construct does have a great deal of relevance. Part of this may be due to the individualism of the United States, and that the costs of that individualism create a need for prosocial development in youth. The tradition of some of the world's major religions considers prosocial behavior fundamental to their doctrines. Further, several philosophers have endorsed the ideation of prosocial behavior and that people have a need to care for their fellow humans. This has directly influenced the groundbreaking work of Lawrence Kohlberg, a major contributor to the rationale behind prosocial development. Now that the relevance of prosocial behavior

has been discussed, this chapter next turns its attention to how prosocial behavior can be developed.

Development of Prosocial Behavior over the Lifespan

Prosocial behaviors develop through childhood and adolescence. Beyond this assertion, little consensus has been achieved among researchers about age-related changes that effect prosocial behavior. Largely, it seems, the work of Hoffman (1982) forms the platform for what is known about early childhood prosocial behavior. His model claims that in the first stage, infants become aware of general distress that is not their own. They tend to react by internalizing the distress and acting accordingly (crying). In the second stage, at about 13 months of age, infants are able to recognize distress in others and attempt to sooth it in ways that they themselves would find acceptable. The third stage takes place at about 2 to 3 years of age where toddlers become capable of taking another's perspective, understanding that others' perspectives differ from their own, and that personal interpretations of events vary. In the fourth stage, which occurs in late childhood, awareness and empathy for the general plight of others develops, either as an individual, or as an entire group or class of people.

Hoffman's model has garnered some empirical support. One study corroborated that newborn infants demonstrate a reactive cry elicited by another infant's cry (Simner, 1971) and another found that that 6-month-old infants rarely become upset when hearing a peer cry (Hay, Nash, & Pederson, 1981). These two studies demonstrate that as infants develop they internalize stimuli differently. Children from the age of 18 to 24 months of age, who were able to recognize themselves in the mirror, were able to demonstrate empathy and prosocial behavior (Johnson, 1982). Two-year old children were able to

assist parents in the care of younger siblings, demonstrating the helping behavior associated with prosocial behavior (Dunn, Kendrick, & McNamee, 1981). They have also been shown to help with household chores (Rheingold, 1982).

Understanding of how prosocial behavior advances throughout adolescence is compromised by studies with conflicting results. A 13-year long longitudinal study completed by Eisenberg et al., (1983; 1987; 1991; 1999) looked at the development of prosocial reasoning and its relation to prosocial behavior in 34 individuals. A variety of measures were used at various points, from observations at age 4/5, donating at ages 9-12, self-report measures and helping task at ages 13-24, self-reported moral behaviors at ages 19-24, mother's report of prosocial behaviors at ages 13-18, and friends' reports of prosocial behaviors from ages 19-24. Each study participant was interviewed 11 times at consistent intervals throughout the study. Interestingly, results indicated that there is a consistency in prosocial behavior over time, suggesting that trait-based prosocial behaviors may exist. Observations of spontaneous sharing at age 4/5 were predictive of higher prosocial behaviors later in life. The study further suggests that prosocial reasoning develops on a linear curve throughout childhood and adolescence. Although the generalizability of this study is in question due to the small sample size, the results of such a monumental effort are interesting. Similarly, Fabes and Eisenberg (1996) conducted a meta-analysis that suggests prosocial behaviors increase as children get older in a generally linear fashion.

However, one noteworthy study of prosocial behavior among adolescents determined that prosocial behaviors do not necessarily increase throughout high school. Carlo and colleagues used a latent growth curve analysis of prosocial development in

adolescents (Carlo et al., 2007). This study investigated approximately 600 students over a 5-year period to examine how prosocial behavior cycled through adolescent years. Students were surveyed each year. Findings were somewhat unclear. In general, prosocial behavior declined throughout high school with a small turnaround in 12th grade. As quality of peer relationships increased, girls' prosocial behavior declined whereas it did not with boys. However, from an individual standpoint, they found that prosocial behavior throughout the 5-year study was quite stable. Based on this study, it would appear that prosocial development does not change remarkably over the high school years, but certainly future study is needed.

Despite the findings of this study, there is still a general belief that prosocial behavior advances throughout childhood and adolescence (Eisenberg & Fabes, 1998). According to Carlo et al. (2007), "the opportunities for, and diversity of, prosocial behaviors increase as children enter adolescence, partly due to new and emerging interpersonal relationships, cognitive and emotive development, and changes in the social context" (p. 302). So it seems there is reason to believe that prosocial behaviors increase throughout adolescence, despite the findings from the latent growth curve study mentioned above. Exactly how prosocial behavior develops is still unclear.

Because the participants of this study are adolescents, a focused discussion on what the term "adolescence" means is warranted. Adolescence is a developmental stage and time of rapid physical cognitive, affective, and moral development that occurs after childhood and before adulthood (Sternberg, 2005). The age range associated with adolescence is typically from 12-18 years, although ascribing an age to a developmental stage is imprecise. Adolescence may be described as a time when many of the "firsts"

associated with adulthood are attained, such as receiving a drivers' license, developing romantic interests, consuming alcohol or recreational drugs, leaving home, and building relationships that aren't dependent on the immediate family. The students in this study are 14-15 years old and most, if not all, fit the description of adolescent.

Determinants of Prosocial Behavior

The determinants are generally a combination of internal and external factors. Internal factors situated within the individual include perspective taking, moral reasoning, empathy/sympathy, cognitive attributions, and personality/temperament (Fabes, Carlo, Kupanoff, & Laible, 1999). External factors, those that are not situated within the person, include family and peer influences, schooling, and culture (Carlo, Fabes, Laible, & Kupanoff, 1999). It is generally agreed that tendencies for prosocial behavior are determined genetically to some extent, although the estimates vary widely, from over 60% to less than 30% (Penner et al., 2005). The following section discusses these factors and how they contribute to prosocial behavior.

Internal factors. Perspective taking has been shown to correlate with prosocial behaviors. It is defined as "the ability or tendency to understand the internal and external states of others, including their social context" (Fabes et al., 1999). In general, and consistent with Hoffman's ideas about prosocial development, the ability to appreciate another's perspective develops about the time a child is 10-12 (Fabes et al., 1999). Perspective taking has also been linked to emotions of empathy and sympathy, which are related to prosocial behavior. Buss and Plomin (1984) point out that perspective taking is not enough to engage in prosocial behavior and that empathy is required for consistent action.

Moral reasoning is another factor that contributes to prosocial behavior, and is defined as "the ability or tendency to think about and make decisions in situations in which there may be conflicting values, norms, rules or laws, needs, or desires" (Fabes et al., 1999). Kohlberg's stages of moral reasoning form a foundation for thought around prosocial behavior, but based on several studies (Eisenberg-Berg & Roth, 1980; Eisenberg-Berg & Hand, 1979; Eisenberg-Berg & Neal; 1981), Eisenberg (1982) suggests that prosocial moral reasoning is substantially distinct from the stages proposed by Kohlberg. She suggests that the phases of prosocial moral reasoning are 1) hedonistic, pragmatic orientation, 2) "needs of others" orientation, 3) approval and interpersonal orientation, 4a) empathetic orientation, 4b) transitional orientation, and 5) strongly internalized orientation. Typically the phases move from where the individual is concerned with selfish, pragmatic consequences to where he or she has an internalized state that involves helping others purely for the sake of helping someone in need. The relationship between prosocial moral reasoning and prosocial behavior is one described below:

> A simple and direct relationship between behavior and moral judgment cannot be expected. Nevertheless, a positive association between moral judgment and prosocial behavior might be found if people who are more empathetic and internalized in their moral judgment behave in a prosocial manner more consistently than people who verbalize less advanced reasoning. (Eisenberg, 1982, p. 237)

Hence, the stage of moral reasoning an individual achieves may partly explain the number of prosocial behaviors they engage in.

Several researchers have stressed the importance of emotions in the development of prosocial behavior. Empathy and sympathy, most notably, are emotions that can elicit motives for altruism (Batson, 1991; Eisenberg, 1986) and thus result in prosocial

behavior. Empathy is considered to be a learned behavior (Karniol, 1982). Nelson and Crick (1999) found that the ability to regulate emotion was higher in early adolescents who were ranked more prosocial than their peers. They also found that the ability to act with minimal distress in the face of emotionally provocative situations, these researchers found, enables individuals to engage in more prosocial acts. Similarly, Carlo, Roesch, and Melby (1998) found that higher scores of anger were negatively correlated with prosocial behavior.

Cognitive factors are considered important for the development of prosocial behavior as well. Eisenberg and Fabes write (1998) that the "ability to discern others' need or distress or the capacity to devise ways to respond to others needs, it would be logical to expect a modest relation between measures of intelligence, and prosocial responding" (p. 683). Karniol (1982) considers the ability to become aware of a need, process that information, and become vicariously aroused by that situation is linked to cognitive ability and prosocial action. Both the ability to make attributions (Fabes et al., 1999) and express motivations (Eisenberg & Fabes, 1998) are linked to prosocial action, as is perceived competence (Midlarsky & Hannah, 1985). It should be noted that perspective taking and moral reasoning are, at times, considered a cognitive factor and at other times a separate category.

Personality and temperament are internal determinants conceptually linked to prosocial action as well. Sociability, shyness, social competence, assertiveness, dominance, aggression, self-esteem, and personal values and goals are all personality factors that enter the prosocial equation (Carlo et al., 1998; Eisenberg & Fabes, 1998; Fabes et al., 1999). Many of these are mediated by the ability to emotionally regulate and

not respond to distress with undue negative emotion. There is a relationship between high levels of emotional regulation and the ability to experience high sympathy and low personal distress (Eisenberg & Fabes, 1998). Many of these temperament variables are considered stable throughout one's life course, although conjecture is mainly theoretical and has minimal empirical evidence to support it (Buss & Plomin, 1984). Although a number of studies have found relations between elements of temperament and sympathy (Davis, 1983; Eisenberg et al., 1994; Rothbart et al., 1994), few have made the next link of temperament variables leading to prosocial behavior. One that did, a study by Carlo, Roesch, and Melby (1998), found that high levels of temperamental anger and low-levels of sociability were linked to decreased prosocial behaviors. In summary, a number of theorists have suggested that prosocial behaviors may be moderated by temperament, particularly sociability and emotionality (Buss & Plomin, 1984; Eisenberg & Fabes, 1992) but there is minimal empirical support for this relation.

Following this discussion of the internal factors that determine prosocial behaviors, there is reason to believe that a treatment designed to increase prosocial action could work. If the treatment was designed to address the importance of perspective taking and empathy, two things that are learned, potential behavioral changes could take place. Further, using lessons that focus on increasing perceived competence could help increase prosocial action. Goal and value clarification exercises may link the internal motivation to engage in prosocial action with the awareness to do so. A study by Wentzel, Filisetti, and Looney (2007) found that having personal prosocial goals was particularly important to prosocial action, and was mediated by perceived competence

and perspective taking. What now follows is a discussion of the external determinants of prosocial behavior, including the family, peer influences, and schooling.

External factors. Family life has a tremendous impact on the intellectual, social, and character development of children. Eisenberg and Murphy (1995) posit that parents may influence prosocial development by providing information and encouraging appropriate behavior, modeling discrete acts of prosocial behavior, punishing inappropriate behavior, and creating an atmosphere that supports empathy development. Although not explicitly a study of prosocial behavior, Zhou et al. (2002) found that parental warmth was related to children's empathy, and that parental positive expressivity was related to children's social functioning (through mediating variables). Siblings play a role as well (Eisenberg & Fabes, 1998). A context for prosocial action is created by sibling influence. Siblings have an opportunity to learn about and act prosocially by the presence of other siblings. Although conflict, teasing, and manipulation occur readily among many siblings, this may provide a context for greater social understanding (Dunn and Munn, 1986; Carlo et al., 1999). According to Lamb (1982):

> Siblings set and maintain standards, provide models to emulate and advice to consider, enact complementary roles in relation to one another, through which both develop and practice social-interactional skills, and serve as confidants and sources of nonjudgmental social support in times of emotional stress. (p. 6)

Further complicating the issue, gender and age differences seem to play a significant role in whether or not prosocial behavior is offered or accepted by siblings (Brody, Stoneman, MacKinnon, & MacKinnon, 1985; Kaneko & Hamazaki, 1987). Family life, including the role of both parents and siblings, can help promote prosocial behavior.

Peer influence can be dramatic, particularly for the age population used in this study (14-15 year olds). As children advance into early adolescence, a shift in both

parent-child relationships and child-peer relationships occur. This can be a bewildering time for all parties involved. Children begin to select peers based on common interests rather than convenience, and the parent-child relationship undergoes a period of realignment (Carlo et al., 1999). As peer friendships are forged, the opportunity for prosocial behavior increases and the initiation of a reciprocal cycle is often realized. In a study of 167 middle school children, Wentzel and McNamara (1999) found that peer acceptance was related to frequency of prosocial behaviors. Research has also determined that popular, well-accepted adolescents typically are more prosocial than unaccepted peers (Hampson, 1984;Wentzel & Caldwell, 1997;Wentzel & Erdley, 1993)

The impact of schooling is likely to contribute to prosocial development, but again, little is known about how schooling affects this development (Eisenberg & Fabes, 1998), particularly among adolescents. Based on several studies, it would appear that programs specifically designed to increase outcomes related to prosocial development (e.g., empathy) could have impact. A study by Feshbach and Feshbach (1982) determined that an empathy-training program in elementary school children significantly increased examples of prosocial behaviors. The study used a group exposed to an empathy-training, another group exposed to a problem-solving training, and a control group that received no special training. The students who received the empathy training exhibited more positive social behaviors and more positive self-evaluation of aggressive and non-aggressive behaviors. Other studies have shown that cooperative education techniques in classroom activities promotes acceptance of peers (Johnson & Johnson, 1975) in addition to cooperation and prosocial behavior.

In a major longitudinal study called the Child Development Project (CDP), researchers developed a curriculum designed to increase prosocial behaviors in elementary age children (Solomon, Watson, Delucchi, Schaps, & Battistich, 1988; Watson, Solomon, Battistich, Schaps, & Solomon, 1989). The program used (a) cooperative activities, (b) regular participation in helping and sharing activities, (c) exposure to role-modeling, (d) role playing, and (e) positive discipline to promote prosocial behavior. Each year in the 5-year study, students exposed to the treatment curriculum scored higher levels of prosocial behavior. A replication study using the same curriculum was completed in 1993, this time following the same students from kindergarten to eighth grade (Solomon, Battistich, & Watson, 1993). Again, students in the treatment group showed higher prosocial scores than did the control group. This time, measures of conflict resolution scores and prosocial reasoning were given as well. Students in the treatment group tended to score higher on both these measures. How well these studies can generalize to other populations other than the one used (primarily Caucasian, high SES, school-aged children) is unknown. However, it does speak to the potential for prosocial behavior to be taught and learned.

All of this has interesting implications for a study of learning transfer, particularly one that uses a curricular aspect to promote prosocial development. The influences of family, siblings, peers, and schooling is largely undetermined empirically, but in each case, the theoretical implications imply that they are a context in which to practice prosocial behavior. This context is critical for a study of transfer, because transfer depends on having a context to apply learning. Thus, the idea that these contexts are available for research participants to apply prosocial behaviors learned through education

programs suggests that the program outcomes could indeed be transferred. Further, the curriculum used by Solomon and colleagues in their CDP study has implications for how the curriculum in this study was designed. Although their curriculum was designed for elementary school-aged children, there are likely conceptual similarities. This is discussed in greater detail later in this chapter. Now, however, this literature review examines how prosocial behavior has been measured.

Measurement of Prosocial Behavior

Prosocial behavior has been assessed and evaluated in a number of ways, none of which are uncommon in social science. Zahn-Waxler and Radke-Yarrow (1982) state that experiments, observations in both natural and laboratory settings, interviews, questionnaires, ratings, projective tests, and sociometric techniques have all been used. Methodological issues have been at times unclear. Definitions of related topics, such as altruism, helping behavior, and prosocial behavior have never achieved consensus and are considerably complex (Fabes & Eisenberg, 1996; Zahn-Waxler & Radke-Yarrow, 1982). Although this is the case with many issues in social science, it is particularly relevant to the study of prosocial behavior. One fundamental distinction that researchers have historically disagreed upon is whether behaviors can be considered prosocial if people engage in the behavior at (a) no cost to themselves, (b) at cost to themselves, or (c) with benefits to themselves. In an attempt to resolve this issue, Carlo, Hausmann, Christiansen, and Randall (2003) developed a multidimensional construct of prosocial behavior that incorporates each of these concepts.

Early investigations involved situations where a research participant was given an opportunity to help, and then the helping behavior (or not) was recorded. In one such

study (Bierhoff, 1983), a researcher dropped a glove about six feet in front of an unsuspecting research subject. In 72% of all simulations the research subject informed the researcher know that he dropped an item, and/or picked it up for them. Bar-Tal (1984) criticizes these types of studies, particularly the ones taking place in a laboratory setting. He claims that subjects rarely know anything about one another, the act of helping was isolated from a naturalistic sequence of interaction, and that often a time constraint was placed on the encounter. Fabes and Eisenberg (1996) also acknowledge the limitations of laboratory studies, yet suggest that they can be valuable in testing ideas about causality.

One popular method of assessing prosocial behavior is by using the behavioral observation of parents, teachers, and peers (e.g., Denham, 1986; Michalik et al., 2007). One study used peer nominations and teacher ratings of students to assess prosocial behavior (Wentzel, Filisetti, & Looney, 2007). These methods may be valuable in the study of very young children (preschoolers) who are unable to fill out questionnaires. Behavioral measures may be somewhat limited by the criticisms lodged by Bar-Tal (see above). Because prosocial behaviors may not take place at the time and place researchers can observe, validity of the results may be affected.

Although purely qualitative studies are rare, interviews and textual analysis are common. These techniques have been used extensively with younger children (e.g., Goossens, Bokhorst, & Bruinsma, 2002; Rosenkoetter, 1999) and considerably with adolescents. With older children, adolescents, and adults, interviewing is often coupled with a rating scale to triangulate the phenomena.

Various measurement instruments have been employed as well. Two of the more popular measures used include the Rushton Altruism Scale (Rushton, Chrisjohn, & Fekken, 1981) and the Prosocial Moral Reasoning Scale (Carlo, Eisenberg, & Knight, 1992). The altruism scale is somewhat dated yet commonly used (e.g., Carlo et al., 1998). It should be noted that although neither the Rushton Altruism Scale (RAS) nor the Prosocial Moral Reasoning Scale (PROM) relate specifically to prosocial behavior but are considered proxies for it. It is interesting to note that many studies use more than one measurement instrument or technique to assess prosocial behaviors (e.g., Carlo et al., 1998).

As noted earlier, recently a multidimensional self-report measure of prosocial behavior has been developed. Carlo and colleagues (2003) developed the prosocial tendencies measure (PTM-R), which uses six subscales to assess prosocial behaviors in early adolescents. The measure is a modification of a previous instrument developed by Carlo and Randall (2002) that measured prosocial behaviors in late adolescents. For this study, we refer to prosocial behavior tendencies as prosocial behaviors.

Subscales of the instrument are (a) compliant, (b) public, (c) anonymous, (d) dire, (e) emotional, and (f) altruism. Compliant behaviors include those that are performed at a request—e.g., if a parent asks a son to wash the dishes. Public prosocial behaviors are those behaviors that are performed in the presence of onlookers, where anonymous behaviors are performed without the actor receiving recognition for them. Dire prosocial behaviors are performed in a crisis, when one or more individuals are in desperate need. Emotionally provocative situations involve a heightened level of conditional distress.

Altruistic behaviors are performed when there is no potential for explicit reward to the actor.

In summary, the measurement of prosocial behavior has been conducted in a number of ways. In particular, behavioral observations, interviews, and self-report scales have been major methods used by researchers, often determined by which population was being studied. As the construct has become more refined and more distinct from altruistic or helping behaviors, it seems likely that study results will have greater validity. Because it has only been recently published, the impact of the PTM-R is still unknown, but it could potentially help researchers further develop an understanding of prosocial behaviors.

Summary of Prosocial Behavior and Expedition Behavior

In summary, prosocial behaviors are a type of helping behavior that may be motivated by a number of different factors, but where the end result is a net benefit to another human. The study of prosocial behavior in youth is particularly important because it may facilitate human living and improve human relations. Prosocial behavior is believed to be somewhat trait-based. There may be a "prosocial personality" that develops over the course of childhood and adolescence. Further, prosocial behavior is influenced by internal factors (perspective taking, moral reasoning, empathy/sympathy, cognitive attributions, and personality/temperament) and external factors (family, peer, school, and culture influences). Educational programs have been successful in developing prosocial students. Prosocial behavior has been successfully measured using a number of techniques, from interviewing to behavioral measures, to self-report instruments. In addition, expedition behavior may serve as a reasonable proxy for

prosocial behavior. The similarities between the two concepts are substantial. They are both behaviors designed to help another person. Although expedition behavior remains a loosely defined term in practitioner-based literature, it has been operationalized as a retrospective self-report subscale.

Conclusion

Evidence shows that prosocial behavior can be developed via an educational curriculum (Solomon et al., 1988; Watson et al., 1989) and that adventure education programs are potent instruments for developing educational outcomes (Hattie et al., 1997). In addition, a number of sources suggest that lessons learned during adventure programming are highly transferable (Gass, 1999; Luckner & Nadler, 1997). Although there is limited empirical support for this idea, a number of studies have successfully used qualitative methods to demonstrate transfer from participation in adventure programming (Holmon & McAvoy, 2004; Sibthorp, 2003b). Thus, it seems likely that the transfer of prosocial behavior skills developed during an adventure program is possible.

Researchers have suggested that there are several different ways to maximize transfer, either by manipulating characteristics of the trainee, characteristics of the training, or the transfer climate (Baldwin & Ford, 1988). Specific instructional mechanisms designed to increase the transfer of outcomes have been developed for use in varied learning environments (Foxon, 1994; Leberman & Martin, 2004; van der Klink et al., 2001). Some of these activities use concepts related to reflection (Yorks et al., 1998; Cyboran, 2005), principle-based learning (Murphy & Woods, 1996), framing activities (Engle, 2006), analogical thinking and "as-if" exercises (Gick & Holyoak, 1983;

Vermeulen, 2002), and using goal-setting activities (Gass, 1999; Yorks, Lamm, and O'Neil, 1999). In addition, optimizing the transfer context may be used as a mechanism of transfer if available (Baldwin & Ford, 1988; Broad & Newstrom, 1992).

In sum, the transfer of expedition/prosocial behavior seems possible by incorporating transfer mechanisms into instructional design. Chapter Three details the treatment curriculum that incorporates several of these mechanisms. The curriculum was administered to participants on four of the NOLS backpacking courses run out of NOLS Teton Valley during the summer of 2008. The other four NOLS backpacking courses did not receive the treatment curriculum.

Hypotheses

Given the preceding literature review, the following hypotheses are offered:

H_1: Expedition behavior gains in the treatment group will be higher than those of the comparison group at course completion.

H_2: The treatment group and the comparison group will differ in level of postprogram prosocial behavior, where the treatment group will exhibit higher prosocial behavior scores at post program and 3-month follow-up.

CHAPTER III

METHODS

The purpose of this study was to examine the effects of a treatment curriculum designed to increase the learning transfer of prosocial/expedition behavior skills following participation in an adventure education course with the National Outdoor Leadership School. This chapter is divided into five sections: (a) setting; (b) participants; (c) procedures (d) measurement; and (e) data analysis.

Setting

The adventure education program used for this quasi-experiment was the National Outdoor Leadership School (NOLS). NOLS was an appropriate organization to use for this study because it is one of the oldest and largest international adventure education programs, has a relatively standardized curriculum, and its instructors are well trained to teach a variety of curricula. NOLS operates on four different continents, serves over 4,000 students annually, has been in existence since 1965, and is recognized as one of the leaders in adventure education.

The specific type of NOLS courses that were used to assess the treatment curriculum were 2-week long backpacking courses for 14- and 15-year old(s), commonly called *adventure courses*. Adventure courses were appropriate programs for this quasi-experiment for several reasons. First, the 14-and 15-year old students who attend

adventure courses are a typical population for programs designed to influence prosocial development—there is a large body of literature that discusses prosocial development (e.g., Solomon et al., 1988; Watson et al., 1989) in early adolescents. Second, subjects were also an age group traditionally served by adventure education programs. Third, younger NOLS students report more gains in learning than older students (Sibthorp et al., 2007), thus a treatment curriculum may influence this population most. Fourth, there is a substantial number of the same type of these courses that run during the summer season. The number of instructors (3) staffed on these courses is always the same; the number of students (13-15) enrolled in each course is remarkably consistent; the physical geography of each trip is similar (Greater Yellowstone Ecosystem); course length is standardized (14 days); and the NOLS branch that the courses are run out of, NOLS Teton Valley, focuses predominantly on this one type of course during the summer season. This increased the likelihood of successfully implementing systematic data collection procedures compared to other NOLS branches, where a greater variety of courses and factors might have influenced data collection.

The standard curriculum for all NOLS courses includes six learning objectives: leadership, communication, judgment and decision making, outdoor skills, environmental awareness, and expedition behavior. From these six learning objectives, program supervisors typically adjust the curriculum to meet the needs of specific courses. After assessing group and individual needs, instructors then adjust curriculum to best suit the course. Because of this factor, each course receives somewhat different curricular content, although it still revolves around the six learning objectives. Most typically, adventure courses focus on expedition behavior and leadership as two of the most

important learning objectives. Students are evaluated by instructors on each learning objective at the end of the course, and the evaluation is sent home to parents.

Adventure courses take place in the Greater Yellowstone Ecosystem, including portions of Wyoming, Idaho, and Montana. The physical geography is typified by traveling on- and off-trail at elevations ranging from 6,000 to 12,000 feet. Courses typically travel three-to-six miles a day throughout National Forests, National Parks, and designated Wilderness. Students often report that course highlights involve peak ascents, fishing, forming friendships, cooking over a camp stove, animal sightings, spending time in nature, and playing games. Depending on group ability and maturity, students hike without instructors towards the end of the course and may spend one or two nights on their own.

Participants

The sample for this study included students from eight NOLS adventure courses. Four of the courses were included in the treatment group and had instructors that were trained to implement the treatment curriculum. The other four courses from Summer 2008 comprised the comparison group, and offered the traditional NOLS EB curriculum. The treatment group had 57 students; the comparison group had 60.

It was not possible to randomly assign participants to courses for the purpose of this study. However, courses are usually not designed to feature any particular homogeneity of students. There is typically gender and geographical diversity. Rarely, two friends enroll in courses together. None of the instructors from any of the courses worked two adventure courses in the summer of 2008.

Measurement

The measurement of prosocial behavior was assessed using the PTM-R, an instrument designed to assess prosocial behaviors in early adolescents. The 21-item instrument features six subscales: (a) compliant, (b) public, (c) anonymous, (d) dire, (e) emotional, and (f) altruism. Two examples of items on the Likert-type scale include "I never wait to help others when they ask for it" and "It makes me feel good when I can comfort someone who is very upset." Demographic data were collected at the conclusion of the questionnaire. In addition, research participants provided the last four digits of their phone number and shoe size for coding. The measurement instrument was administered three times: precourse when students arrived at the NOLS branch, immediately postcourse, and at 3 months postcourse. Scores between the treatment group and comparison group were compared to assess differences in the transfer of expedition behavior.

The subscales of the PTM-R have specific descriptions. Carlo et al. (2003) described compliant behaviors as those that are performed at a request—if a parent asks a son to wash the dishes, for instance. The Cronbach's alpha for the compliant subscale was .80 and the test-retest reliability was .64 (Carlo et al., 2003). Public prosocial behaviors are those behaviors that are performed in the presence of onlookers, where anonymous behaviors are performed without the actor receiving recognition for them. The Cronbach's alpha for the public subscale was .76 and the test-retest reliability was .54 (Carlo et al., 2003). The Cronbach's alpha for the anonymous subscale was .76 and the test-retest reliability was .66. Dire prosocial behaviors are performed in the event of a crisis, when one or more individuals are in desperate need. The Cronbach's alpha for the

dire subscale was .71 and the test-retest reliability was .72. Emotionally provocative situations involve a heightened level of conditional distress. The Cronbach's alpha for the emotionally provocative subscale was .86 and the test-retest reliability was .72. Altruistic behaviors are performed when there was no potential for explicit reward to the actor. The Cronbach's alpha for the altruistic subscale was .59 and the test-retest reliability was .76.

To assess how well expedition behavior was learned (hypothesis one), research participants were asked to complete the expedition behavior composite scale from the NOLS Outcome Instrument (Sibthorp, Paisley, & Gookin, 2007). The NOI measures learning outcomes per the six NOLS learning objectives. Students participating in this study filled out the expedition behavior composite scale at the end of their courses. This data helped assess how well the treatment curriculum performed at teaching expedition behavior skills as an immediate postcourse outcome.

In addition to completing the PTM-R at three months postcourse, students also responded to a series of qualitative questions. The responses to these questions were compared between the treatment and comparison groups. These questions included:

1. Please describe the expedition behavior skills you learned on your course.
2. What were the ways that you learned these skills?
3. How have the expedition behavior skills you learned on your NOLS course been important to you?
4. Please provide the biggest single example of how you have used your expedition behavior skills since completing your course.
5. How would your friends and family describe the impact of your expedition behavior skills that you learned on your NOLS course?

Procedures

The following section describes the specific procedures used in this study and the treatment curriculum that was designed to increase the transfer of learning of expedition behavior skills.

NOLS adventure courses are staffed with three instructors. NOLS instructors are experienced outdoor educators; to be hired at NOLS, potential instructors must possess experience in teaching, leadership, and be well-rounded outdoorspeople. Then each instructor must attend a month-long training course where they learn teaching strategies and the NOLS curriculum. During their tenure at the school, instructors typically diversify their skill set as they work different course areas (Alaska v. Mexico) and course types (climbing v. sea kayaking). With each change in course type and area additional curriculum pieces are added.

This was useful for this study, which placed the burden of providing the treatment curriculum on the instructors. It also placed the burden upon NOLS program staff to train instructors how to implement the curriculum. Instructors were trained how and when to administer the treatment curriculum prior to beginning the course.

Throughout the course, the instructors delivered the treatment curriculum to the students at appropriate times. Although each instructor team was provided with an outline of when to ideally administer the individual learning experiences, they used their discretion in light of environmental variables. After the treatment courses ended, exit interviews were performed with instructors to get a sense for how well they administered the treatment curriculum, how long the curriculum took to administer, and how well they thought the curriculum worked. Treatment fidelity data can be reviewed in Appendix J.

The traditional curriculum used in the comparison group included lessons about small group behavior, group development, feedback, and communication-oriented activities. The following table describes the traditional curriculum versus and treatment curriculum. It should be noted that the traditional curriculum varied significantly from course to course. The treatment curriculum is described in greater detail later in this chapter (see Table 2).

The three times that students completed the PTM-R were when they arrived at the NOLS branch, immediately following their course, and 3 months postcourse. In addition, students completed qualitative questions 3 months postcourse.

There were eight courses over the summer. The instructor teams that implement the treatment curriculum were staffed on the final four courses. Although this was a limitation of the study, it prevented "leakage" of the treatment curriculum from the treatment group to the comparison group.

Table 2

Treatment and Traditional Curricula

Treatment Curriculum	**Traditional Curriculum**
Precourse goal setting worksheet	Positive learning environment discussion
Intentionally frontloaded positive learning environment discussion	Expedition behavior class
Expedition behavior class	Stages of group development class
Case study/small group discussion	Conflict resolution class
Journaling exercise	Communication styles class
Action plan	Feedback class
Letter to parents	Awareness wheel class

Treatment Curriculum

The design of the curriculum drew primarily from three different sources for its content and implementation. First, it incorporated the experiential learning theory of David Kolb, where experience is linked to reflection, abstraction, and experimentation. This was consistent with NOLS educational pedagogy and it is also related to mechanisms of increasing transference, such as using analogy (e.g., Gick & Holyoak, 1983). Second, it used concepts from the learning transfer literature that suggest mechanisms to increase transfer. Third, it drew upon the conceptual ideas within adventure education on how to increase transfer of learning, particularly from the work of Gass (1999).

In consideration of the above influences, the curriculum will include (a) a precourse goal-setting worksheet designed to illicit goals and communicate expedition-behavior curriculum expectations (b) frontloading by instructors during the first day, (c) the standard NOLS expedition behavior class that communicates concepts and relevance, (d) a case study analysis by students, (e) a journaling exercise, (f) a letter sent home to parents about the expedition behaviors their child learned, and (f) an action plan developed by students about how they could implement expedition behaviors in the frontcountry.

Goal Setting Worksheet

A worksheet was sent home to students two weeks before the start of their course. The worksheet was designed to introduce the NOLS curriculum and specifically expedition behavior. It asked students to fill out a set of goals for the forthcoming

course; one goal about each of the six NOLS learning objectives. It asked students to elaborate on how they thought learning expedition behavior would impact their life postcourse. The worksheets were collected and turned in to instructors to help assess student needs and provide personalized instruction.

Frontloading

Frontloading the transfer-specific curriculum was achieved in two ways. The first way was during the Positive Learning Environment (PLE) talk that is included in every NOLS course. The first day of each course—typically within hours of students arriving at the NOLS branch—instructors gather students together to discuss how to create a positive learning environment for the course. This collaborative process almost always includes a discussion about what behaviors are acceptable and unacceptable. It is somewhat akin to a full-value contract (Luckner & Nadler, 1997); students sign their name to a declaration that lists these behaviors and attitudes, acknowledging a commitment to the group in the form of a contract. For the purpose of this study, this opportunity afforded instructors a chance to incorporate the following:

> We call most of this stuff expedition behavior—something that we'll talk about in greater detail down the trail—and it is key to helping make this expedition as successful as possible. Good EB is where you get up a little early to make a special breakfast for your tentmates, or pick some berries to share, or help someone put on their backpack, or set up the tent for your group as soon as you get to camp. Basically sharing your psyche. These things are just as important to the success of our trip as being able to hike, or use a map and compass, or cross a stream.
>
> And you know, these actions aren't only important on an expedition. I know you know this. They'll serve you well throughout the expedition, of course, but they're also life skills that that assist teamwork, group development, and personal relationships. For instance, helping parents cook dinner or clean up a mess will benefit that relationship. Helping a stranger carry her groceries to her car will

> help make his day that much better, and give you a sense of satisfaction. Helping a friend with a difficult problem can be extremely important.

The PLE discussion was a collaborative process that involves both students and instructors. Typically, instructors elicit answers from students about what behaviors are acceptable and which are not. Once student responses become less frequent, instructors take the time to add several that they find important to the success of an expedition. As part of the treatment curriculum, I requested that instructors added "empathy," "perspective taking" and "altruism" to the list. Because these are seen as correlates to prosocial behavior (Eisenberg & Fabes, 1998) it may have been useful to explicitly acknowledge them. Further, it allows them to be used throughout the course as examples of what contributes to good expedition behavior.

The second step in the frontloading process was for NOLS program staff to photocopy the PLE agreement onto a piece 5" by 7" card stock. The front of the card listed the behaviors that they agreed to engage in and the ones that they agreed not to engage in, with their signatures. On the back of the card were two separate lists: one that identified backcountry expedition behaviors and frontcountry prosocial behaviors. A photo of the group was taken and added to the card. The card laminated and sent into the field with them. It was hoped that this acted as an artifact for them to remind them of their commitment.

It was not expected that instructors read the script above verbatim. As part of the packet they received, there was a bulleted list of points for them to address during their PLE talk.

Expedition Behavior Class

Instructors typically teach a basic expedition behavior class around the third day of the course while students are still in the "honeymoon stage" of group development, where misbehavior is typically minimal and students are still "feeling out" their peers and their place in the group. It is taught in a variety of ways and its typical goals are to provide examples of good and bad expedition behavior.

Case Study/Small Group Discussion

Implementing the Case Study/Small Group Discussion was achieved by having students read and assess three short case studies as a tent group after dinner. They were encouraged to use the 5" by 7" card that they received before leaving for the field as a reference. Further, they were asked to analyze the case study according to the behaviors/principles that were listed on the card (the ones they offered during the PLE conversation, and the ones that were added on the back. Each case study incorporated guided processing questions for students to answer. The following morning, students and instructors met in two different groups to process the activity.

Journaling

Students were asked a series of questions to answer for guided journaling exercises. These questions were:

1. How have I demonstrated good expedition behavior on this course?
2. Which areas could I have done better?
3. How will I use these skills with my family?
4. How will I use these at school?

Instructors will check-in with students to discuss the journaling exercise.

Action Plan

Students developed an action plan at the end of the course. Then they met one-on-one with an instructor to discuss their plans. The instructor offered feedback on the action plan. This was the capstone expedition behavior activity. A sample of the action plan is listed as an appendix.

Letter to Parents

A letter was sent home to parents on day 10 of their child's course. The letter described some of the things their child was learning, most notably about expedition behavior. A copy of the 5" by 7" card that featured their child's course was sent as well. The letter encouraged parents to discuss several of the key features of the program with their child.

One of the primary constraints upon the curriculum was that it needed to be easy to administer. NOLS program staff had between 2-to-4 hours to train instructors how to provide it; this was not very much time. Fortunately, many of the instructors were capable of incorporating new aspects of curriculum into a course on short notice, as NOLS curriculum varies somewhat from branch to branch (e.g., wildlife, environmental, and/or land management variables) and season to season (modifications and changed emphases to curriculum occur commonly). Further, instructors were familiar with expedition behavior and able to understand the concepts of the treatment curriculum easily. Nonetheless, the activities were designed either as adaptations of existing curriculum or were student-guided activities where instructors only guided the final reflection and debriefing. Thus, the burden of implementing several new learning activities were lessened.

Summary of Treatment Curriculum

These learning activities were expected to increase the transfer of learned expedition behaviors to the frontcountry. The treatment curriculum components were supported by literature from the adventure education field (e.g., Gass, 1999), the cognitive psychology perspective of learning transfer (e.g., Gick & Holyoak, 1983), the human resource development perspective of learning transfer (e.g., Baldwin & Ford, 1988), and the prosocial behavior field (e.g., Eisenberg & Fabes, 1998). Most of the curriculum was dependent on students reflecting on lessons learned throughout their course and anticipating applying them in a future context. The letter to parents was the only way the treatment was trying to influence the climate for transfer.

Data Analysis

Quantitative data were entered into SPSS 14.0 and then cleaned and screened for univariate and multivariate outliers. Each of the six subscales of the PTM-R were treated as noncommensurate dependent variables (Carlo & Randall, 2002). Repeated measures ANOVA was used to examine the differences between the treatment group and the comparison group for the EB composite scale of the NOI. Repeated measures ANOVA was appropriate for use when examining only one dependent variable (Kerlinger & Lee, 2000); in this case, the EB composite scale.

Repeated measures MANOVA was used to examine differences between the treatment group and the comparison group for the PTM-R. MANOVA was an appropriate analysis to use when examining multiple noncommensurate dependent

variables (Kerlinger & Lee, 2000) where multiple measurements were completed on a single research participant.

Qualitative data were analyzed through constant comparison by two independent researchers and then enumerated. Enumeration was competed by counting the number of responses in a theme. The unit of analysis was the individual response. Constant comparison technique is a "systematic method for recording, coding, and analyzing data" (Henderson, 2006). It involves comparing participant responses against one another until specific themes emerge. It was thought that constant comparison technique might be able to detect differences in the responses between the treatment and comparison groups.

Two decision rules were created to guide data analysis. First, if a participant answered a question more than once, the first coherent response was the one that was used in data analysis. Second, if the participant answered the question more than once but a second (or subsequent) answer was elaborated on in great length, then that response was selected.

CHAPTER IV

RESULTS

This study examined the effects of a treatment curriculum on the transfer of prosocial behaviors (PSB) compared to a traditional curriculum. Quantitative measures of PSB were collected precourse, postcourse, and 3 months postcourse. The expedition behavior (EB) items of the NOLS Outcome Instrument (NOI) were administered to research participants immediately postcourse to assess the efficacy of the treatment curriculum. Qualitative data were gathered 3 months postcourse to assess transfer of prosocial behaviors. This chapter shares the results of both quantitative and qualitative data.

Quantitative Results

Results for the quantitative data analysis are below. These results report three separate types of analyses.

(a) Hypothesis testing for the NOI for the pretest and posttest measurement intervals.

(b) Hypothesis testing for the PTM-R treatment v. traditional curricula for all three measurement intervals. In addition to this test, the PTM-R was analyzed for only the pretest and posttest measurement interval (excluding the follow-up

measurement). This was completed because the low-response rate in the follow-up measurement constrained data analysis.

(c) Exploratory data analysis examining the overall role of participation on NOLS courses and the development of prosocial behavior.

Before discussing the quantitative results in detail, the techniques to clean and screen data are discussed along with Cronbach's alpha scores.

Data Cleaning and Screening

Data were cleaned and screened for univariate and multivariate outliers. When data were missing they were excluded from analysis. Missing data scores were minimized during the first two measurement intervals due the presence of the researcher. Data were run using SPSS version 17. Assumptions of normality were assessed by way of the descriptive statistics (e.g., item and scale level kurtosis and skewness) and normality was considered adequate for parametric statistics.

Cronbach's alphas were assessed to determine internal consistency, both among subscales and as a composite measure of the PTM-R. Cronbach's alpha measures how well a set of items acts as a single measure. In general, an alpha of .70 or higher is viewed as minimally acceptable and higher alphas are viewed as better (Tabachnick and Fidell, 2001). The alpha for the EB composite scale of the NOI was .69. The alpha for the public subscale of the PTM-R was .73. The alpha for the dire subscale of the PTM-R was .66. The compliance subscale of the PTM-R was .47. The alpha for the anonymous subscale of the PTM-R was .72. The alpha for the emotional subscale of the PTM-R was .83. The alpha for the altruistic subscale of the PTM-R was .66. As a composite measure, the alpha for the PTM-R was .72. Given that the alpha of three of the subscales

was less than .70, and that the overall PTM-R's alpha was .72, there is some empirical support for considering the PTM-R as a unidimensional construct.

Exploration of inter-subscale correlations revealed that three sets of items were correlated with one another. Subscales correlations ranged from a low of -.17 between altruistic and anonymous and a high of .437 between dire and emotional. These correlations suggested that the subscales of the PTM-R are somewhat related, yet remain distinct. This was consistent with the theory and literature (Carlo et al., 2003).

To explore the relationship of expedition behavior to the prosocial behavior, a correlation test was performed between the PTM-R posttest results and the NOI posttest results. The Pearson correlation was .448, a indicating 20% shared variance between the measure of EB and PSB.

NOI Hypothesis Testing

Hypothesis tests of the EB Composite of the NOI were conducted. This hypothesis stated: "H_1: Expedition behavior gains in the treatment group will be higher than those of the comparison group at course completion." Descriptive statistics are listed in Table 3. The response rate for NOI was 96% and 100% for the comparison group and the treatment group, respectively. In general, students reported pretest scores that were somewhat high (5.09-5.30 out of 8, by group), and posttest scores that were

Table 3

Descriptive Statistics for the NOI

	n	Pretest M*	Posttest M*	Grand Mean
Comparison Group	60	5.30 (.12)	6.49 (.094)	5.86
Treatment Group	57	5.09 (.12)	6.65 (.097)	

*Standard error is listed in parentheses

higher still. Results for hypothesis testing are displayed in Table 4.

Repeated measures ANOVA determined that H_1 was supported by these data. As per the interaction term, the students in the treatment group scored significantly higher on the NOI EB Composite Scale than did students in the comparison group. These data supported the hypothesis that a treatment curriculum based on exercises to foster transfer moderates the learning of EB on NOLS courses.

PTM-R Hypothesis Testing

The second hypothesis tested was "H_2: the treatment group and the comparison group will differ in level of prosocial behavior, where the treatment by time interaction will be significant because the treatment group will exhibit higher scores at postprogram and 3-month follow-up." The PTM-R regarded prosocial behavior as a multi-dimensional construct composed of six different subscales: compliant, emotional, dire, altruistic, anonymous, and public.

Because each of these dimensions was considered part of a single construct, a

Table 4

Between and Within Subjects for the NOLS Outcome Instrument

Between Subjects				
	df	*F*	*Wilks' Λ*	*p*
Txt	1	.023	1.0	.33
Within Subjects				
	df	*F*	*Wilks' Λ*	*p*
Time	1	440.86	.21	.00
Time by txt	1	7.98	.93	.01
Error = 28.777	115			

multivariate analysis of variance (MANOVA) was performed to assess the development of prosocial behavior following participation in the treatment curriculum compared to the traditional curriculum.

As discussed above, the PTM-R was analyzed twice; the first analysis examined all three times of measurement (which included a low number of research respondents due to attrition between the second and third times of measurement) and the second analysis included only the first two times of measurement (a high number of research participants). Results are provided for each of these analyses.

Descriptive statistics for each of the subscales of the PTM-R were compiled and are available in Table 5. Research participants as a sample were most likely to engage in compliant prosocial behaviors and least likely to engage in altruistic prosocial behaviors. In Table 5, the mean for the pretest was calculated by compiling the total of the scores of a given subscale and dividing that number by the total number of number of respondents. The standard error (in parentheses) represents a standard of deviation from the mean

Table 5

Means and Standard Error for PTM-R Subscales by Three Times

Subscale	*n*	M* Pre-test	M* Post-Test	M* Follow-Up	Grand Mean
Dire (com)	55	3.80 (.13)	4.07 (.14)	3.80 (.17)	3.80
Dire (txt)	56	3.67 (.19)	3.86 (.20)	3.58 (.24)	
Compliant (com)	55	3.90 (.16)	3.90 (.14)	3.76 (.16)	3.82
Compliant (txt)	56	3.67 (.22)	3.88 (.21)	3.83 (.23)	
Public (com)	55	2.15 (.16)	2.53 (.18)	2.13 (.17)	2.44
Public (txt)	56	2.67 (.22)	2.64 (.26)	2.56 (.24)	
Altruistic (com)	55	2.18 (.17)	2.19 (.15)	2.01 (.15)	2.22
Altruistic (txt)	56	2.33 (.24)	2.60 (.22)	2.04 (.27)	
Anonymous (com)	55	2.65 (.18)	3.03 (.19)	2.60 (.20)	2.89
Anonymous (txt)	56	3.15 (.26)	3.29 (.27)	2.67 (.28)	
Emotional (com)	55	3.36 (.18)	3.73 (.17)	3.38 (.23)	3.26
Emotional (txt)	56	3.13 (.26)	3.27 (.24)	2.78 (.33)	

* Standard error in parentheses

amongst a sample. The higher a standard error, the more widespread the ranges of scores are in a given sample (Kerlinger & Lee, 2000). The grand mean represents the "mean of means" across the samples. For instance, the grand mean for the dire comparison curriculum (3.800) and dire treatment curriculum (3.667) is displayed as 3.796, the mean of both groups.

Between subjects analysis revealed that there was no significant difference in students who were exposed to the treatment curriculum compared to the traditional curriculum. Within subjects analysis revealed that time was a significant factor in development of prosocial behavior, but time by treatment was not significant. The significance of time was not a hypothesized result and will be discussed below. Results are shown in Table 6.

Because of the low response rate at the follow-up time, the sample size was dramatically reduced when all three levels of time were included in the analyses. Thus, an additional analysis was performed with only the first two times of measurement.

Table 6

Between and Within Subjects for Three Times of Measurement

	Between Subjects			
	df	*F*	*Wilks' Λ*	*p*
Txt	6	1.20	.806	.333
	Within Subjects			
	df	*F*	*Wilks' Λ*	*p*
Time*	12	2.52	.442	.026
Time by txt	12	1.27	.611	.296

*As this result was not hypothesized, it will be discussed below through exploratory data analysis .

Between subjects analysis of the first two times of measurement again revealed that there was no significant difference in students who were exposed to the treatment curriculum versus the traditional curriculum. Likewise, within-subjects analysis revealed that time was a significant factor in development of prosocial behavior, but time by treatment was not significant. Results are shown in Table 7.

Exploratory Testing

While not an explicit hypothesis of this study, it is worth noting that time was significantly related to PTM-R score. Students reported statistically higher scores on the PTM-R immediately postcourse. For the sake of parsimony, this analysis used the composite PTM-R score rather than the subscale scores. Descriptive statistics for the composite PTM-R are provided in Table 8.

Repeated Measures ANOVA was used to analyze the effects of time on the

Table 7

Means and Standard Error for PTM-R Subscales by Pre-test and Post-test

Subscale	*n*	M Pre-test*	M Post-Test*	Grand Mean
Dire (com)	55	3.84 (.10)	4.12 (.10)	3.92
Dire (txt)	56	3.79 (.10)	3.94 (.10)	
Compliant (com)	55	3.86 (.11)	3.90 (.10)	3.84
Compliant (txt)	56	3.66 (.11)	3.95 (.10)	
Public (com)	55	2.30 (.10)	2.72 (.12)	2.69
Public (txt)	56	2.65 (.10)	3.10 (.12)	
Altruistic (com)	55	2.21 (.12)	2.21 (.11)	2.38
Altruistic (txt)	56	2.41 (.11)	2.69 (.11)	
Anonymous (com)	55	2.78 (.12)	3.18 (.11)	2.98
Anonymous (txt)	56	2.68 (.12)	3.26 (.11)	
Emotional (com)	55	3.48 (.12)	3.86 (.11)	3.56
Emotional (txt)	56	3.29 (.11)	3.62 (.11)	

*Standard error is listed in parentheses

Table 8

Descriptive Statistics for the PTM-R Composite by Three Times

	N	*M*	*Grand M*
Pretest	116	3.07 (.04)	
Posttest	115	3.37 (.03)	3.22 (.03)
Follow-up	37	2.93 (.04)	

development of PSB. Notably, students in both the treatment group and comparison group learned the duration of their NOLS course. Likewise, scores from students in the treatment and comparison groups returned to baseline levels at three-months postcourse. Repeated measures statistics are displayed in Table 9.

Trend analysis revealed a significant ($F = 51.51$, $df = 1$, $p < .000$) quadratic trend between the precourse and postcourse, and follow-up measurement intervals. Refer to Figure 1 to further examine the quadratic trend. The exploratory analysis, including the role of adventure education and the development of prosocial behavior will be explored at greater length in the discussion section.

In summary, quantitative analysis determined that H_1 was supported. Students in the treatment group reported learning expedition behavior skills to a greater extent than

Table 9

Between and Within Subjects for Three Times of Measurement

		Between Subjects		
	df	*F*	*Wilks' Λ*	*p*
Txt	*1*	*.029*	.99	*.87*
		Within Subjects		
	df	*F*	*Wilks' Λ*	*p*
Time	2	8.614	.66	.01
Time by txt	2	.413	.99	.66

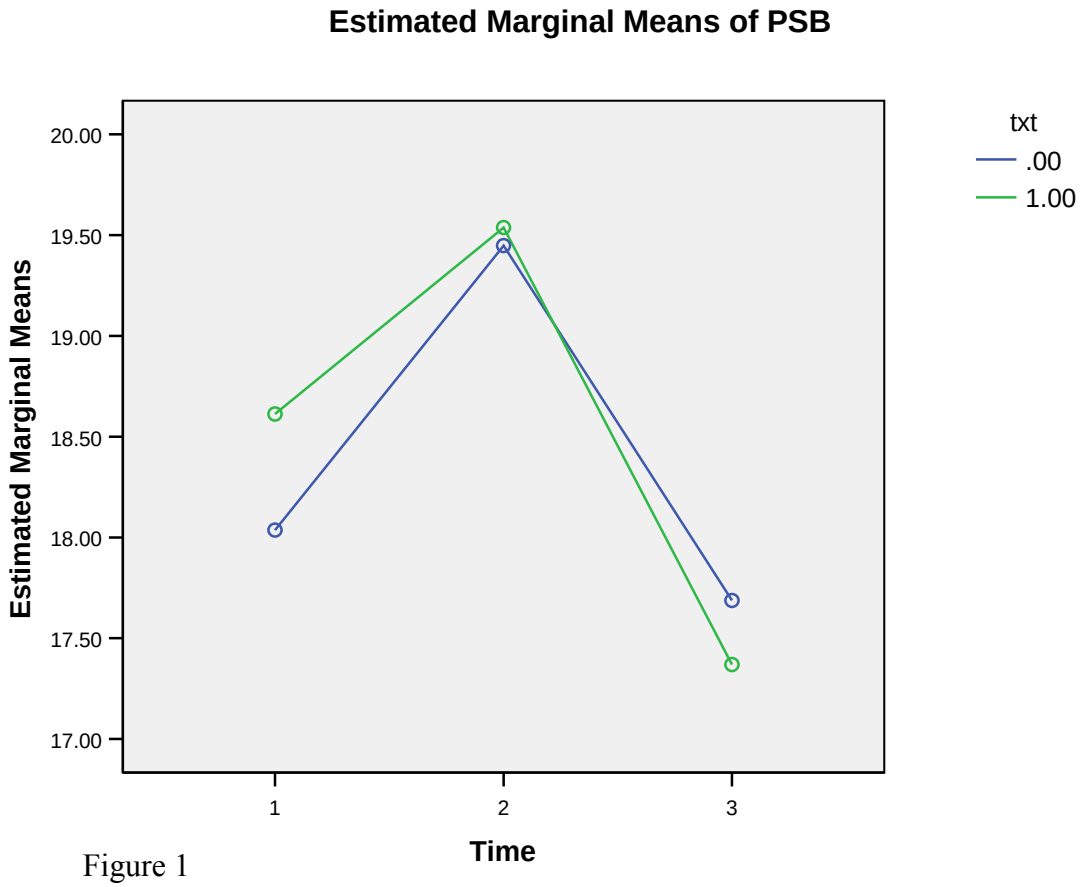


Figure 1

did those enrolled in the comparison group. This suggests that elements in the treatment curriculum were more successful at teaching about EB than was the traditional curriculum. H_2 was not supported. Students in the treatment curriculum did not transfer prosocial behaviors to a greater extent than did the comparison curriculum, nor did they report more learning of prosocial behavior immediately following their course. These findings will be discussed at greater length in the next chapter.

Qualitative Results

Five separate qualitative questions were asked at 3 months postcourse. These questions were posed after participants responded to the PTM-R. Initially, this study

intended to use qualitative data to examine differences between the treatment and comparison groups, but data analysis did not reveal differences. Upon consideration, both researchers involved in the data analysis agreed that the results would be most rich if the samples from the treatment and comparison groups were combined. Although this does not shed light upon the original research question, it does reveal information on how students operationalized their EB skills postexpedition.

The five questions posed to research participants were:

1. What was the expedition behavior like on your course?
2. Please describe the expedition behavior skills that you learned on your NOLS course.
3. What was it about the course that helped you learn these skills?
4. In what ways have they been useful to you since you've been home?
5. What is the biggest single example of how you've used your expedition behavior skills since you've been home?

Questions three, four, and five were analyzed using constant comparison technique. Constant comparison technique is a three-stage process in which the researcher first fits responses into coding themes; second, integrates the themes by comparing them to one another and checking them with the data; and third, themes are delimited to maximize parsimony and scope (Henderson, 2006). A second researcher verified themes once they were developed and reduced. Data were then enumerated to understand the relative importance of each theme.

Two decision rules were created to guide data analysis. First, if a participant answered a question more than once, the first coherent response was the one that was used in data analysis. Second, if the participant answered the question more than once but a second (or subsequent) answer was elaborated on in great length, then that response was selected.

The first question that was analyzed was "What was it about the course that helped you learn expedition behavior?". Fifty participants answered this question; eight were removed from analysis because they were idiosyncratic. One example of an idiosyncratic response is "I previously knew what expedition behavior was and what skills it included." Another example of an idiosyncratic response is "NOLS sucks." Data analysis revealed six distinct themes: (a) relevance, (b) instructors and students, (c) instructors, (d) leadership opportunity, (e) course tasks, and (f) a specific type of social interaction. The theme "relevance" suggests that EB was so important that it was immediately and undeniably relevant. The theme "instructors and students" suggests that a combination of the students and the instructors helped the student learn expedition behavior. The theme "instructors" suggests that the instructors were complicit in helping students learn about EB. The theme "leadership opportunity" suggested that it was the leadership opportunities inherent in the program design that led to learning about EB. The theme "course tasks" emerged as a way of describing how the fundamental mechanics of being on an outdoor expedition helped students learn about EB. The theme "specific type of social interaction" suggested that the way groups were structured (e.g., cooking, tent, and hiking groups) facilitated the learning of EB. Results for the first question are reported in Table 11.

The second question analyzed was "In what ways have they been useful to you since you've been home." Forty-five participants answered this question; three were not coded because they were idiosyncratic. One example of an idiosyncratic response to this question is "If I'm in a bad situation I remember how much worse NOLS was." Data analysis revealed five distinct themes: (a) working with or understanding others, (b)

Table 11

What Was It about the Course That Helped You Learn Expedition Behavior?

Theme Title	Theme Descriptor	#	Exemplary Quote
The Relevance	That EB was so important that it was immediately relevant	10	"The fact that you are directly spending life in one of the most natural of places on the face of the Earth with people who know nothing about each other. When placed in this situation, your expedition behavior has to be good not for yourself, but for the success of the expedition."
The Instructors and Students	A combinations of the students and the instructors	9	"The great people that I have worked with on the course, which include the instructors and the other kids!"
The Instructors	The instructors or specific instructional techniques	8	"When the course directors would always encourage us to stay positive."
The leadership opportunity	Leadership opportunities inherent in the course design	7	"On the course while serving as leader of the day I had to receive my group members' input before making crucial decisions regarding navigation. Also while serving as leader of the day, I had to come to understand certain peoples' physical capabilities so that I could make my pace just right for them."
Course tasks	Tasks inherent to expedition living	4	"Planning who was going to carry what and who was going to cook and clean the dishes."
Specific type of social interaction	A specific structure that involved social living	4	"Cooking groups, tent groups, trail groups etc."

helped with a task, (c) perspective on emotions, (d) adds a general perspective, and (e) helps me be a leader. The theme "working with or understanding others" suggests that students developed skills around communicating and interacting with other people. The theme "helped with a task" means that students identified a specific task that they assisted other(s) with as a result of learning EB. The theme "perspective on emotions" suggests that they developed an awareness of their own emotional reactions to situations. The theme "adds a general perspective" suggests that students gained an understanding on a specific aspect of their life.

Table 12

In What Ways Has Expedition Behavior Been Useful to You since You've Been Home?

Theme Title	Theme Descriptor	#	Exemplary Quote
Working with or understanding others	Helped develop ability to assist or understand others	18	"They have helped me to further develop a love for helping and being kind to others - whether through community service, explaining a chemistry concept to a friend, or just clearing everyone's trash from my lunch table. I have applied these skills at home, at school, with family, with friends, and in just about everything I do!!"
Helped with a task	Helped accomplish a task-related chore	10	"Everyday chores, family trips, and school trips."
Perspective on emotions	Helped gain self awareness or regulate emotions	7	"I feel that I have become a much calmer and more tolerant person since my course and most of my peers have actually told me they see a difference."
Adds a general perspective	Helped gain a perspective on an aspect of life	4	"When I arrive late from soccer or school activities and I still have three hours of homework, I look back to what I went through in my NOLS course and I finish my work."
Helps me be a leader	Helped achieve a leadership role	3	"I have been a leader in my community at school through student government and have been more helpful to my mom."

The theme "helps me be a leader" suggests that students used the EB skills to act as a leader in one part of their life. Results for this question are reported in Table 12.

The third question analyzed was "What is the biggest single example of how you've used your expedition behavior skills since you've been home?" Results can be viewed in Table 13. Forty-five participants answered this question; 12 were not coded because they were idiosyncratic. One example of an idiosyncratic response from this question is "I be chill." Data analysis revealed five distinct themes: (a) at school, (b) with friends, (c) with self, (d) with family, and (e) with teams. Because answers were similar to the answers in question number four, themes were developed around contexts where expedition behaviors took place. The theme "at school" suggests that the biggest

Table 13

What Is the Biggest Single Example of How You Have Used EB since You've Been Home?

Theme Title	Theme Descriptor	#	Exemplary Quote
At school	EB skill took place at school	10	"On student council we had two days to plan a big pep rally and with only four of us working on it we had to work long hours in those two days to finish it. It was very frustrating at time since we were few doing a big job but I helped to lead my peers to complete the task."
With friends	EB skill took place with friends	8	"The biggest single example of how I have used my expedition behavior skills since completing my course has been being able to meet new friends at the public high school I now attend. I have been able to maintain a successful relationship with friends with different interests and backgrounds and have been able to keep peace with them all of the time, which did not happen at the private middle school I attended."
With self	EB skill was most important intrapersonally	6	"I thought that having good EB is useful simply internally - making yourself a stronger person, dealing with adversity, etc. - because EB is about having respect for other people. We're all in the same boat!"
With family	EB skill was most important with family	5	"I have become more positive towards doing things like housework, so I have become a better member of my family."
With teams	EB skill was most important with teams	4	"On my volleyball team, everyone must put in some effort to get the job done, and so far, it has been working great."

example of performing EB occurred at school. The theme "with friends" suggests that the biggest example of performing EB occurred in the presence of friends. The theme "with self" suggests that the biggest example of performing EB was by fostering an understanding of self. The theme "with family" suggests that the biggest example of performing EB was with family. The theme "with teams" suggests that the biggest example of performing EB was with sports teams.

Summary

In summary, the treatment curriculum was effective in increasing EB scores among the sample between the precourse measure and the postcourse measure. However, the treatment curriculum did not foster increased transfer between the treatment and comparison groups. Exploratory data analysis suggests that the sample learned about PSB over the duration of their NOLS course. Qualitative data analysis was unable to determine differences in the responses between the treatment and comparison groups. Qualitative data suggested that students use their expedition behavior skills in multiple locations and in multiple ways. These findings are discussed at length in the following section.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the effects of a treatment curriculum on the learning and transfer of prosocial and expedition behavior skills compared to a traditional curriculum. It was hypothesized that the treatment curriculum would increase both the proximal learning of EB (hypothesis 1) and the transfer of PSB (hypothesis 2). Although the results of this study do not support an increase in transfer of learning of PSB, students did report greater learning of expedition behavior skills compared to the traditional curriculum. Exploratory analysis indicated that students learned PSB during their NOLS course. Qualitative data analysis determined that students use their EB skills in a number of ways and with different types of people. These results are discussed in this section, as are limitations of the study and implications for both future research and practice.

Interpretation of Results

Discussion about Hypothesis #1

It is almost axiomatic that adventure education programs are capable of producing intrapersonal, interpersonal, and group outcomes (see Hattie et al., 1997, for discussion). Results from this study join the substantial body of literature suggesting that proximal gains in observed variables are higher postcourse than prior to participating in a program.

Specifically, the treatment curriculum used in this study increased scores from the EB composite scale of the NOI. In light of the effectiveness of adventure education program efficacy at increasing proximal gains in a variable, this finding was not necessarily surprising. What is more relevant, perhaps, is that a treatment curriculum significantly increased gains in learning compared to a traditional curriculum. This finding suggests that adventure education programming can still be improved, or at least modified to highlight a particular outcome for a specific population.

Which raises the following question: "What was it about the treatment curriculum that was responsible for the increase in EB scores?" Without further study, this question cannot be conclusively answered, however it is worth noting that much of the curriculum can be (generally) described as self-directed reflective exercises involving discussion that take advantage of unstructured time. In this researcher's experience, periods of unstructured time on NOLS courses are relatively few and far between, and the few that remain often serve as a period for students (and instructors) to decompress. However, the use or non-use of unstructured time for self-directed curriculum should be a decision made intentionally by staff. One tentative conclusion from this study is that utilizing otherwise unstructured time for self-directed curriculum may have a significant impact on learning outcomes. Thus, the question for instructional and program staff is: "Do we want to structure more time for students to engage in self-directed curriculum at the benefit of higher outcomes?" The appropriate answer will vary from course to course.

An additional consideration is the use of a precourse goal setting worksheet. Seventy-six percent of the students responded to this worksheet. Although a majority of them did not appear to be completed with a great deal of thoroughness in mind, others

were exhaustively filled out. This type of exercise has been shown to facilitate educational outcomes (e.g., Dansereau et al., 1979; Wehmeyer et al., 2000), and may have been a factor in increasing EB scores for this sample. Some adventure programs may find it useful to include a precourse goal setting worksheet at minimal cost to administrative resources.

Whether or not prosocial behavior was a reasonable proxy for expedition behavior is a potential delimitation. It may have been that prosocial behavior was distinct enough from expedition behavior that the PTM-R was unable to detect transfer of expedition behavior skills. The EB construct and the PSB construct had only 20% shared variance.

Discussion about Hypothesis #2

Despite immediate postcourse differences in expedition behavior, changes in prosocial behavior over time appeared largely unaffected by the curriculum. Although there are several potential reasons for this, it may be that transfer may be too difficult to target through intentional interventions. There are a substantial number of factors involved in whether an individual transfers a particular outcome from a backcountry context to a frontcountry context. The number of factors involved in transfer is perhaps best described by reflecting upon complexity of the Learning Transfer System Inventory (LTSI; Holton et al., 2000), a measurement instrument designed to assess transfer factors. The instrument identifies 57 variables that influence transfer. If in fact transfer is affected by 57 different variables, one can imagine the difficulties in effectively programming for transfer.

Although both quantitative and qualitative data (e.g., Miller, 2001; Gass & Priest, 2006; Sibthorp, Furman, Paisley, & Gookin, 2008) suggest that transfer from adventure

programs occurs, it may be that specific transfer variables are resistant to intervention in adventure programming. One exception may be for specific, focused course types, such as professional-level courses, but this awaits future study.

One specific type of constraint likely involved in this study was that the context of learning and the context of application are significantly dissimilar (Barnett & Ceci, 2002). The role of PSB during a NOLS course was relevant; students had few options to select their peers during a NOLS course the way they would during home life, and thus, the relevance of getting along with others was highlighted. Relevance has been shown to be an important factor in learning outcomes (Paisley, Furman, Sibthorp, & Gookin, 2008) in NOLS programming, a finding that was corroborated by the qualitative data gathered in this study. Once back home and removed from the contextual relevance, learning deterioration could be expected. Although one would hope that learning about group dynamics and expedition behavior is relevant to adolescents, perhaps the social milieu that teenagers exist in does not support the ready application of expedition behavior skills.

One potential reason that may explain these findings is the landscape of adolescence as a time of change. Adolescence is a time of substantial changes to all three systems; however, the term "adolescence" can be defined in multiple ways. Adolescence may be thought of as the time between childhood and adulthood; it may be described as an age (often 12-18); it may be defined by the onset of puberty, or possibly by the "firsts" associated with that stage of life, such as driving a vehicle, serving on a jury, consuming alcohol, or entering high school. Regardless of the specific definition, the research

participants in this study are adolescents, and undergoing changes associated with that stage of development.

Adolescence is a time of rapid cognitive development, which may have influenced the outcomes in this study. Ernst and Mueller (2008) state that during adolescence reaction time decreases, cognitive inhibition increases, working memory capacity improves, computation processing increases, the ability to set up rules to guide behavior increases, and the amount of time required to reference rules decreases. Behavioral displays of cognitive development, however, are more likely to be mediated by social and peer influences. Steinberg (2005) suggests that adolescents have significant cognitive capacities, but "age differences in social and emotional factors, such as susceptibility to peer influence or impulse control, lead to age differences in actual decision-making" (p. 71). In this study, it is likely that adolescents have a substantial degree of cognitive ability to understand and engage in prosocial behaviors, but are susceptible to peer influence and emotional states. If peer influence does not support prosocial behaviors postcourse, then students are less likely to engage in them, despite sufficient cognitive capacities.

The unique affective profile of adolescents may have also impacted the results of this study. Adolescence is a time of marked changes in sensitivity to social status (Josephs, 2003), romantic interests, increases risk-taking behavior (Cauffman & Steinberg, 1995), increases in reward-seeking behavior (Galvin, 2010), and an increased desire for peer affiliation (Richards, Crowe, Larson, & Swarr, 1998). Notably, some of these behaviors were reported among individuals in this sample during their NOLS' courses, including illegal drug use, discrete and overt romantic relationships, and

unsupervised risk-taking with flammable chemicals. Because of the changes in affective development, research participants may not be capable of engaging in prosocial behaviors when faced with emotional reasons not to. Developing and maintaining social status may be contingent upon support of and for peers (Josephs, 2003), participating in or condoning bullying behaviors (Juvonen, Graham, & Schuster, 2003), and decreased participation in family activities (Richards et al., 1998); all of which may lead to a decline in prosocial behaviors. The structure of an adolescent's world may be one that discourages prosocial behavior and encourages antisocial behavior.

Changes in adolescents' relationship to morality may also shed light on the results of this study. Kohlberg (1984) suggests that humans develop through six stages of moral development, beginning with an *obedience and punishment* driven morality and continuing to a *universal ethics* morality (although few people achieve this level of moral development). Adolescents are typically in a stage that emphasizes individualism, good interpersonal relationships, or maintaining social order. Even if adolescents are capable of moral reasoning, though, their behavior may not reflect it. Steinberg (2005) notes, "The correlation between adolescents' moral reasoning and their moral behavior is especially likely to break down when individuals define issues as personal choices rather than ethical dilemmas" (p. 71). Sobesky (1983) determined that adolescents are more likely to consider morality in a hypothetical scenario, but less likely to hold themselves to the same moral standards in real life scenarios. In this study it seems possible that students were able to demonstrate EB and PSB during their NOLS course, but postcourse, students were in a morality stage defined by self-interest that did not reward nor encourage prosocial behaviors. In light of the cognitive, affective, and moral

development that the participants in this study are engaging in, the failure to find the transfer of prosocial behavior is not surprising. Nonetheless, qualitative data suggest that some transfer of prosocial behavior did occur, and will be discussed in the following section.

This study contributes to ideas regarding adolescent development by suggesting that adolescents are more likely to engage in prosocial behaviors when the context of a recent team-based course is fresh in their mind. This speaks to the efficacy of NOLS courses in developing effective teams that work well together, yet, as the results suggest, these team-based behaviors may not be transferred to life postcourse.

Discussion About Exploratory Data Analysis

Exploratory data analysis determined that PSB was learned over the duration of the NOLS course for both the treatment and traditional curriculum groups. This is consistent with results from other studies that suggest PSB is a learnable outcome. For instance, Solomon and colleagues authored a series of publications (e.g., Solomon, et. al., 1988) that used cooperative activities, regular participation in helping and sharing activities, exposure to role-modeling, role playing, and positive discipline to promote prosocial behavior for school children. The present study may have been able to foster learning about PSB because of the relevance (noted in the previous section) and because many of the activities on a NOLS course are functionally similar to those examined by Solomon et al (1988).

This result is consistent with a phenomenon in adventure education programs called postgroup euphoria (Hattie et al., 1997). Postgroup euphoria occurs when students return from the field in a euphoric state, a common outcome that may influence scores on

self-report data. Although it is difficult to say with confidence if post-group euphoria did affect the results from this study, the fact that scores from both the treatment and comparison groups does raise the question.

As mentioned previously, one of the fundamental assumptions of adventure education is that transfer ought to exist. However, the quadratic trend demonstrated by the exploratory data analysis shows that learning deteriorates over time. Thus, the assumption that transfer will occur from participation in adventure programs should be carefully considered.

Discussion About Qualitative Findings

Qualitative data analysis regarded three questions: (a) What was it about the course that helped you learn EB?; (b) In what ways has EB been useful to you since you've been home?; and (c) What is the biggest single example of how you have used EB since you've been home?

Regarding the first question, students reported that they learned EB as a function of relevance, the instructors and students, the instructors, the leadership opportunity, course tasks, and a specific type of social interaction. The responses were similar to the findings from Paisley et al. (2008) who determined that EB is learned as a function of social dynamics, course experience, formal classes, relevance, role-modeling, and feedback. It appears that EB is not learned in a single way, but is learned in different ways by different people. Likewise, Mize, Ladd and Price (1985) suggest that PSB is can be learned through role modeling, which a number of research participants in this sample noted.

Regarding the second question, students reported that (a) working with or understanding others, (b) helping with a task, (c) gaining perspective on emotions, (d) gaining a general perspective, and (e) helping them be a leader were all ways that EB had been useful to them since they had been home. It appears that some students in the sample identified learning expedition behavior as something that was transferable to everyday life, and that EB is a transferable outcome of participation on NOLS courses. The responses also bear a likeness to PSB, suggesting that EB and PSB are indeed similar concepts.

Responses from the third question bore a similarity to responses from the second question. However, analysis focused on the context of application rather than context of transfer. As such, students reported that they used their EB skills (a) at school, (b) with their friends, (c) with their self, (d) with their family, and (e) with teams. This result suggests that for the sample, EB was a transferable outcome of their NOLS course in multiple places. Although it would be nice to believe these findings were a result of their NOLS course, it is possible that the research participants only identified how their behaviors were EB-like, instead of engaging in them because they learned something new on their NOLS course.

The qualitative data did support that curriculum learned during adventure education programs does indeed transfer to life postcourse. This is consistent with prior research regarding transfer in adventure education (e.g., Gass, Garvey, & Sugerman; Holman & McAvoy, 2004; Miller, 2001; Sibthorp, 2003b). This study contributes to the body of literature regarding transfer by suggesting that prosocial behavior is a transferrable outcome.

Delimitations

There are several delimitations of this study. It is unclear if the total-time spent teaching the treatment curriculum was equal to that of the traditional curriculum. Some authors (e.g., Sternberg, 2005) have suggested that the total time devoted to a subject is one of the most relevant ways of increasing learning. Exit interviews with instructors suggested that the time was approximately the same in both cases, however, the mechanics of teaching EB on NOLS courses varies. It may vary based on instructor preferences, course length, or how well the group is performing.

The effectiveness of instructor training delimited this study. The three-hour time period provided for this study to train instructors was enough to have established instructor buy-in, communicated topic relevance, and described curriculum content. In addition, the fidelity of the implementation is unclear. This issue of "treatment fidelity," as it is often called, is of some importance in outcome studies. Moncher and Prinz (1991) recommended the use of practitioner journals to promote treatment fidelity. This study did not use any such devices to increase treatment fidelity due to the fear of overburdening, and potentially irritating, instructors. Exit interviews suggested that instructors performed well when implementing the curriculum, but variance in the effectiveness of implementation is likely to have occurred. In the future, implementing curricular changes on a systemwide level, rather than on a very select programmatic level, would make curriculum delivery more consistent.

Two of the distinct delimitations to increasing the response rate was using adolescents as research participants and trying to solicit responses in a discrete time period—that of 3 months exactly. By extending the time period that responses could be

accepted, response rate would likely be increased. Also, by using an adult population instead of an adolescent one, contact information may be easier to deduce. (For instance, at times students did not know their phone number or email address; did not know if they would be living with one parent or another, or if they would be at a boarding school.) The contact information provided by NOLS was not always accurate.

A primary delimitation to detecting transfer, or more conclusively determining lack there of, in this study was the low-response rate. This researcher attempted to contact each student via email twice and via telephone three times. In addition, a letter was sent to students and parents 1 month prior to the survey implementation. Despite these efforts, at times this correspondence (a) reached the students, who did not return any messages, (b) reached family members who did not relay a message, and (c) did not reach the student due to errors in contact information. It is likely that this failure to respond to correspondence was, at times, an act of avoidance, perhaps because a student did not want to discuss their NOLS experience. In particular, there was one course that summer that was fraught with behavioral issues that left both students and parents dissatisfied.

Implications for Future Research

The results of this study lead to several questions for future research. There is significant room for development in establishing evidence of process-related mechanisms and transfer from adventure education. Although a number of authors have found evidence of transfer from qualitative studies (e.g., Holman & McAvoy, 2004), notably fewer have found evidence of transfer from a quantitative perspective (e.g., Gass & Priest, 2006; Sibthorp et al., 2008). It is likely that the development of a valid and

reliable program-specific transfer measure can assist in building literature regarding what individuals do with the skills they glean from adventure programs. For instance, the NOI, a NOLS-specific outcome measure, consistently detects postcourse changes. A similar measure, designed for assessing transfer, awaits development.

Future researchers may wish to examine the definition of transfer to guide them in their research. Although some authors suggest that transfer is a discrete outcome (e.g., Detterman, 1993; Santrock, 2001), others (e.g., McCowan et al., 1999; Ormond, 2003) maintain that transfer is a process. By adopting a different definition of transfer, researchers may be able to detect transfer in different ways than by a discrete outcome. This will, of course, be thoughtful, creative work and require new measurement instruments.

This study attempted to influence transfer by using a precourse goal setting worksheet and a letter home to parents. These types of interventions are perhaps central to enhancing transfer in adventure education. These interventions are relatively simple to implement. Leberman and Martin (2004) used a postcourse reflection exercise to enhance transfer from an adventure experience. Studies which seek to influence transfer both pre- and postcourse may incorporate these types of interventions.

Future research may further distinguish which of the intervention components used in this study were useful in facilitating proximal learning. This study sought to replace lessons based on information exchange—that it, didactic, lecture-based lessons—with reflective components intended to create personal meaning. Although adventure programs typically excel at creating learning experiences that are active and engaging,

perhaps augmenting those experiences with guided reflection activities would garner stronger learner outcomes.

Implications for Practice

The results of this study have implications for practitioners working in adventure education programs. Most of the interventions used in the treatment curriculum may be used autonomously of program design, and can be implemented within the scope of a single program. Adventure educators may consider using guided reflection activities on their courses with the goal of increasing overlearning, deep-learning, or creating personal meaning. It is likely that many programs do this already, but educators should consider these activities for inclusion in courses. They can be used in multiple skill domains, from group dynamics skills to technical skills to environmental science. In this researcher's experience, though, focusing on this type of learning may preclude other course outcomes.

Upon reflection of this study and results, the insights of Detterman (1993) gain a richer meaning. Detterman claimed that transfer is largely an idiosyncratic domain that is difficult—if not impossible—for educators to influence. Although this perspective is a bitter one for educators who would like to influence transfer among their students, Detterman certainly has a point that transfer is a serendipitous variable that is difficult to program for.

Nevertheless, adventure education programs may wish to consider developing evidence-based methods for fostering learning transfer. Specifically, developing means of facilitating precourse goal setting and postcourse reflection may increase program effectiveness by engaging learners for a longer duration, and by enhancing

intercontextuality (Engle, 2006). Although the nature of adventure education programs is likely a transfer-maximizing experience, it is probable that there are means of increasing transfer as yet undetermined.

APPENDIX A

ASSENT FORM

Assent to Participate in a Study

"Expedition Behavior at Home and In the Field"
Investigators: Jim Sibthorp and Nate Furman

Purpose of the Research

We are asking you to take part in a research study because we are trying to learn more about how teenagers who go on NOLS courses use the skills that they learn on their courses.

Procedure

If you agree to be in this study you will be asked to complete questionnaires at the beginning of your NOLS course, at the end of the NOLS course, and three months after your NOLS course. The questionnaires include questions about how you feel about how you act around other people, particularly when they need your help. The questionnaire will take you about 10 minutes to complete.

Risks

The risks of the study are small. Sometimes people feel uncomfortable reflecting on themselves or how they communicate with others. So, the risks are similar to those you have when you think about yourself and how you act around others. However, you do not have to answer any questions that make you feel bad or uncomfortable.

Benefits

Being in this study will help us to understand how NOLS students use their skills after the course is over. This will help NOLS offer better curriculum to their students in the future.

Alternative Procedures and Voluntary Participation

If you don't want to be in this study, you don't have to be in it. Remember, being in this study is up to you and no one will be upset if you don't want to participate. You change your mind later if you want to stop. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. But even if your parents say "yes" you can still decide not to do this.

Confidentiality

All of your records about this research study will be kept locked up so no one else can see

them. To ensure confidentiality, all completed questionnaires from adolescents will be kept in a locked file cabinet. Further, all the data on the questionnaires is anonymous; we will not ask for your name and will use the last four digits of your telephone number and your shoe size to match up the different questionnaires. The investigators intend on publishing and presenting the findings. The investigators intend to keep the information until February of 2008 and then it will be destroyed.

Person to Contact

You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call Jim Sibthorp or Nate Furman at (801) 581-8542 where you can leave a message 24 hours a day.

Consent

Signing my name at the bottom means that I agree to be in this study. You and your parents can keep a copy of this form for your records.

Printed Name of Child

Signature of Child | Date

Printed Name of Witness

Signature of Witness | Date

APPENDIX B

EB COMPOSITE SCALE OF THE NOLS OUTCOME INSTRUMENT

Please tell us how much these statements sound like you. Circling an "8" means that the statement sounds very much like you. Circling a "1" means that the statement sounds very little like you.

I take initiative in completing group tasks:

NOT LIKE ME……SOMEWHAT LIKE ME……LIKE ME

1 2 3 4 5 6 7 8

I am patient with others:

NOT LIKE ME……SOMEWHAT LIKE ME……LIKE ME

1 2 3 4 5 6 7 8

I often take responsibility without being asked:

NOT LIKE ME……SOMEWHAT LIKE ME……LIKE ME

1 2 3 4 5 6 7 8

I place emphasis on group goals above personal goals:

NOT LIKE ME……SOMEWHAT LIKE ME……LIKE ME

1 2 3 4 5 6 7 8

I maintain a positive attitude in adverse conditions:

NOT LIKE ME……SOMEWHAT LIKE ME……LIKE ME

1 2 3 4 5 6 7 8

Please provide some information about yourself:

1. What are the last four digits of your phone number?

_____

2. What is your shoe size?

_____

3. How old are you?

_____

4. Are you male or female?

_____

APPENDIX C

PTM-R WITH SCORING KEY

Below are sentences that might or might not describe you. Please indicate HOW MUCH EACH STATEMENT DESCRIBES YOU by using the scale below.

DOES NOT DESCRIBE ME AT ALL	DESCRIBES ME A LITTLE	SOMEWHAT DESCRIBES ME	DESCRIBES ME WELL	DESCRIBES ME GREATLY
1	2	3	4	5

Pub	1. I can help others best when people are watching me.
Emot	2. It makes me feel good when I can comfort someone who is very upset.
Pub	3. When other people are around, it is easier for me to help others in need.
*Alt	4. I think that one of the best things about helping others is that it makes me look good.
Dire	5. I tend to help people who are in a real crisis or need.
Com	6. When people ask me to help them, I don't hesitate.
Anon	7. I prefer to donate money without anyone knowing.
Dire	8. I tend to help people who are hurt badly.
*Alt	9. I believe that donating goods or money works best when I get some benefit.
Anon	10. I tend to help others in need when they do not know who helped them.
Emot	11. I tend to help others especially when they are really emotional.
Pub	12. Helping others when I am being watched is when I work best.
Dire	13. It is easy for me to help others when they are in a bad situation.
Anon	14. Most of the time, I help others when they do not know who helped them.
Emot	15. I respond to helping others best when the situation is highly emotional.
Com	16. I never wait to help others when they ask for it.
Anon	17. I think that helping others without them knowing is the best type of situation.
*Alt	18. One of the best things about doing charity work is that it looks good.
Emot	19. Emotional situations make me want to help others in need.
*Alt	20. I feel that if I help someone, they should help me in the future.
Emot	21. I usually help others when they are very upset.

NOTE. * indicates item is reverse scored. Pub =Public Emot=Emotional Dire = Dire Anon = Anonymous Alt = Altruism Com=Compliant.

Rev. 11/17/06

APPENDIX D

LETTER HOME TO PARENTS

[Name of NOLS Program Supervisor]
Program Supervisor
NOLS Teton Valley
166 E. 200 S.
Driggs, Idaho 83422
(208) 354-8443
[Date]

[Recipient Name]
[Street Address]
[City, State, Zip Code]

Dear [Recipient Name],

Hello from NOLS Teton Valley! I'm writing to let you know that [Name of Student] successfully made it into the field on [Date Course Departed]. By now, [sex] is deep in the [Mountain Range], learning about the leadership, group dynamics, and the wilderness all around [sex]. I am the program supervisor who worked the course that [Name of Student] is on; I work with the instructors to get them ready for the course, meet the students as they hop off the bus, and spend a day and a half helping to get them ready for the field.

One of the things that NOLS believe helps students use the skills they learn on their NOLS course is to make sure that they feel supported in using those skills. Perhaps the most transferable learning outcomes from a NOLS Adventure Course involve the skills students learn about teamwork, group dynamics, and interpersonal communication. In particular, the desire and aptitude to assist others when needed is a practical, useful ability that many students report learning on their course. In the backcountry, we call this expedition behavior. We find that this awareness of others, coupled with the desire to help, is one of the hallmark traits of leaders and team members.

To help facilitate [Name of Student] using their teamwork skills, I hope that you ask them specifically about how they learned expedition behavior skills and how they can use them at home. I realize that when [Name of Student] gets home you'll each have many stories to tell and share with one another. In due time, please have one or two intentional conversations with [Name of Student] about their experience working as a team and helping others in the backcountry. This may help [sex] transfer these skills to life back home.

We've found that there is a transition stage after a course ends. Typically, when a student returns from the field they immerse themselves in all the things they've missed: friends, family, television, and pizza. Oftentimes, the skills they have learned take time to materialize, as they learn how they might apply what they learned in the woods and apply them back at home. At some point, you might ask what areas of their life they might be

able to demonstrate helping behavior: at home, at school, while volunteering, with their friends, or with community organizations.

If you have any questions about how to help provide a supportive atmosphere where [Name of Student] can exercise the skills they learned on their course, please do not hesitate to call or email. I am very invested in your student having an incredible time while they cook warm meals, slap a few mosquitoes, and hike up and down the hills. I am equally invested in helping them maximize the learning they can attain from NOLS.

Best regards,

[Program Supervisor Name]

APPENDIX E

PRECOURSE GOAL SETTING WORKSHEET

NOLS Leadership and Expedition Behavior Goal Setting Worksheet

Return the following information to NOLS Teton Valley no more that 10 days before your course start date. It can be returned to the address provided on the letterhead, attn: Nathan Furman.

1. The one thing I would like to most lead about teamwork is:

_____
_____

2. I believe that great teams are successful because:

_____
_____

3. Two things I can do during my NOLS course to make sure our group works as a team are:

_____
_____

4. Now, please rate yourself on a scal of 1 to 10 on the following statements. A score of 10, for instance, would indicate that the item is very like me. A score of 1, on the other hand, would indicate that the item is very unlike me. If you're sending this via email, you can **bold** the number to indicate your selection.

(a) I work well as a part of a team.

Not Like Me									Like Me
1	2	3	4	5	6	7	8	9	10

(b) I maintain a positive attitude when things are very hard.

Not Like Me									Like Me
1	2	3	4	5	6	7	8	9	10

(c) I support the people around me when they are facing hardship

Not Like Me									Like Me
1	2	3	4	5	6	7	8	9	10

(d) I always pitch in when asked for help

Not Like Me									Like Me
1	2	3	4	5	6	7	8	9	10

Leadership includes peer leadership, active followership, designated leadership, and self-leadership. We believe that one does not need to be the designated leader to be in leadership role. Studets at NOLS realize that leading oneself is the most significant leadership role they can fill.

1. The thing I would like to most learn about leadership is:

_____

2. A great leader I admire is:

_____

3. I look up to this person because:

_____

4. I could be more like this person if I learned these two things:

_____

_____

5. The last time I was in a leadership role was:

_____

6. The most intimidating things about being in a leadership role is:

_____

7. Some of the ways I've been a leader in the last 2 years are:

_____

_____

8. Please rate yourself on a scale of 1 to 10 on the following statements.

(a) I am comfortable stepping into a leadership role and directing others.

Not Like Me									Like Me
1	2	3	4	5	6	7	8	9	10

(b) I enjoy supporting others when they are in a leadership role.

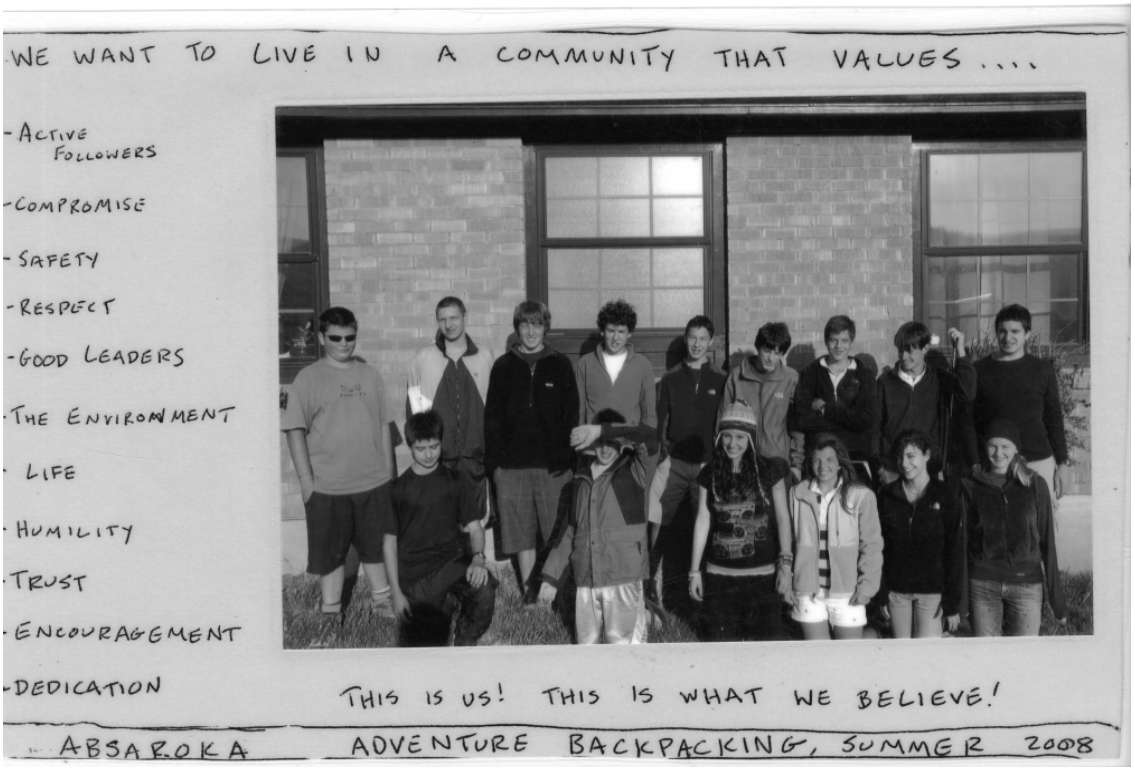
Not Like Me									Like Me
1	2	3	4	5	6	7	8	9	10

(c) I try to role model leadership skills even when I am not in a leadership role.

Not Like Me									Like Me
1	2	3	4	5	6	7	8	9	10

APPENDIX F

PLE CONTRACT


WE WANT TO LIVE IN A COMMUNITY THAT VALUES ....
- ACTIVE FOLLOWERS
- COMPROMISE
- SAFETY
- RESPECT
- GOOD LEADERS
- THE ENVIRONMENT
- LIFE
- HUMILITY
- TRUST
- ENCOURAGEMENT
- DEDICATION
THIS IS US! THIS IS WHAT WE BELIEVE!
ABSAROKA ADVENTURE BACKPACKING, SUMMER 2008

APPENDIX G

JOURNALING ASSIGNMENT

Journaling Assignment

Directions: Please answer the follwing questons.. Answers should be clear, thorough, and legible. Bring this sheet of paper to your instructor before you check in.

1. How have I demondtrated good expedition behavior on this course?

2. Are there times when I could have demonstrated better expedition behavior, and if so, when were those times?

3. How can I use good expedition behavior skills with my family?

4. How can I use good expedition behavior skills at school?

5. Are there any other places that I can use good expedition behavior after this course?

APPENDIX H

CASE STUDY EXERCISES

Directions: Please read the scenarios out loud to your tent group. After reading reach scenario, discuss the questions and develop a clear, consice, thorough, and legible response on the space proided. Responses should be elaborate and articulate. Your instructors will debrief these scenarios with you tomorrow.

Case Study #1: During his NOLS course, a 14-year old student named Scott developed tendonitis in his right ankel that made it difficult for him to hike while carrying a pack. He did his best to shoulder the burden without complaining, but he was in a great deal of pain. He was also ashamed that he was slowing the group down during the hiking days, and worried that his hiking team was getting annoyed with him. Joan, another student on the course, was the Leader of the Day on a day when Scott was hiking slowly and in a lot of pain. Joan knew that expedition behavior was an essential part of leadership and she wanted to be a good leader for Scott. She also knew that if her hiking team didn't hurry up then they might not make it to camp that night. If they don't make it to camp, she feels that her Leader of the Day experience will be a failure.

1. What should Joan do?

2. Why should she do that?

3. How will this affect Scott? How will it affect the rest of the group?

4. What would be good expedition behavior in this case?

Case study #2
A yound woman named Lucy had a very unusual type of blood. One day right after Lucy began school and was accepted to the baseball team, a doctor called to ask her to give a large amount of blood to a girl who was very sik and needed more blood of the same kind as Lucy's to get well. Because Lucy was the only person in the town with the sick girl's type of blood, and since this was a rare and serious sickness, the blood would have to be given a number of times over a period of several weeks. So, if Lucy agreed to give her blood, she would need to go to the hospital for several weeks. Eing in the hospital would make Lucy feel weak for awhile, and she would lose her spot on the team, and would get far behind in school or work.

1. What should Lucy do?

2. Why should she do that?

3. What would be good expedition behavior in this case?

4. What are the similarities between the two stories?

APPENDIX I

ACTION PLAN

Action Plan

The following action plan is designed to help you use your expedition behavior skills that you learned on your NOLS course. It asks you to identify several realistic situations in your life back home where you have an opportunity to help out. The help might be for parents, friends, siblings, teachers, or others. Remember to be realistic. The first one is filled out as an example. The second one is partially filled in: fill out the black spots on it and then develop your own examples. If you have questions, ask an instructor for help.

Situation Description	What I would normally do	What I will do to practice good EB	How I will gauge my improved performance	Potential obstacles to my plan	How I will deal with these
Mom is tired after not being able to sleep well last night	*Feel bad for her*	*Get up early and make her breakfast*	*Whether she appreciates it or not*	*That I'll be tired in the morning, too*	*Remember that sometimes doing nice things requires perseverance, just like hiking up a peak*
A kid in my class is threatening another student					

APPENDIX J

TREATMENT FIDELITY DATA

Treatment Fidelity Data: Exit Interviews

The following data is the summary of the exit interviews that were used to assess treatment fidelity and treatment effectiveness. At the end of the course, the following questions were asked of instructors. Instructors elaborated to varying degrees; however after elaboration I asked them to summarize by providing me with a short answer to the discussion. Typically the exit interviews took 20 minutes.

For the comparison group:
Question A: Would you describe that the EB curriculum offered on this course was a standard EB curriculum?
Question B: About how long did all of the EB-related curricular components take to administer?
Question C: Was it successful?

For the treatment group:
Question A: Was the EB curriculum delivered as designed?
Question B: About how long did all of the EB-related curricular components take to administer?
Question C: On a scale of 1-10, do you think that the treatment curriculum was effective?

	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8
Txt/Control?	Control	Control	Control	Control	Txt	Txt	Txt	Txt
Question A	Standard	No Data	Standard	Standard	Yes	Yes	Yes	Yes
Question B	10 hours	No Data	8 hours	10 hours	8 hours	10 hours	8 hours	12 hours
Question C	Yes	No Data	Yes	Yes	8	8	9	8

Notes:
Many instructors didn't think that the action plan worked well. They felt that the answers were contrived and students were rushing to finish them up. Many appreciated the directed Positive Learning Environment talk. Many appreciated the small-group discussions that were a part of the case study exercise.

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